

FCCB c/o Benny Bolin  
Route One, Box 331B  
Allen, Texas 75002  
(214)727-2395

# Fractional Currency Collectors Board

## NOVEMBER 1995 NEWSLETTER

Yes, it is that time again. Yet another fascinating newsletter. During the past three months since the last one, not a whole lot has happened on the Fractional Currency news front. The biggest news is the Currency Auctions of America sale of Martin Delger's (one of our founding members) collection. Once again, CAA did an excellent job with the catalog. Their catalogs are getting to be quite the reference for fractional. For that and their support of our niche of the hobby, we extend them our thanks. If you did not get a copy of this or prior sales, contact Len Glazer (another founder) to check the availability of copies. This sale was taking place at the very minute (no kidding--the exact minute) that I handed this off to the printer. Rather than delay the newsletter, I will report any significant news of the sale in the February issue. The other big news is that another of our founders, John Wilson has been elected to the ANA board of directors. His wife Nancy (yet another founding member) was a member of the board for years before, so our lineage continues. You will notice a little change in format of this edition. This was a recommendation of my printer. In this format, you could actually three hole punch the newsletter and place them in an album. Drop me a note and let me know what you think of the new format. It does require me to do some cutting and pasting, if the article is printed in newspaper form and I sometimes have crooked eyes. If I hear nothing, I will assume you like it and will continue with this format. Also, what do you think of entering it into the club newsletter competition held yearly by the ANA (I think)?

### IN MEMORIAM

We recently lost one of our members, Mr. Kenneth Keller. Mr. Keller was a member for many years and was a true collector and wonderful man who had a true love for his hobby, especially sutlers which he recently published a book on. I certainly enjoyed talking with him at many Memphis shows. To his family, the FCCB would like to extend its' sympathies and offer our encouragement and support in the difficult times ahead. Mr. Keller will be sorely missed!

## **PUBLISHING DATES**

I have had more than one inquiry into why this newsletter is not published more frequently. There are three reasons:

1. **Material.** We are a very specialized group, so there is not a lot of new material/articles that surface.
2. **Money.** In order to keep our dues where they are, we have to watch our expenses. With postage and printing costs, more frequent mailings are probably cost prohibitive. Currently, my wife stuffs, stamps and mails all the newsletters for free, so that helps somewhat and I have a very good deal with my printer, so I hope to be able to build the Treasury somewhat to provide for when these two services cost more.
3. **Time.** As you all are very aware, this post is purely a voluntary one. The time it takes to put the newsletter together, take it to the printer, stuff and mail is quite significant. I certainly enjoy doing this, but just do not have the time (or money/material) to do it more frequently. My goal is to print a newsletter every February, late May (pre-Memphis), late July (post Memphis) and November. If anything earth shattering comes up in between, I will do separate mailings.

## **MEMBER INVOLVEMENT**

Unfortunately, there seems to be very little involvement in our organization by our members. Milt provides many articles, etc., for the newsletter and Bill Brandimore recruits new members, but I do not see a lot from others. Please, do what you can to help us keep the newsletter informative and the membership growing. If someone who went to St. Louis, Long Beach, FUN (in Jan.) will send me a report, I will also report these in the next edition.

## **NEW FINDS**

Only one was reported to me, a payable in postage stamps note (see attachment). Did anyone find anything new or interesting, maybe at the St. Louis show (or anywhere else) you want to share with us? I did see one piece I was very interested in, but could not afford. In the recent Christies auction, they had a piece of paper a Civil War soldier had written his will on and mailed it to his wife. As postage, he used a piece of fractional currency. The catalog had it listed as a 1338, but the printing date of that note does not correspond to the year the letter was written, so it must have been a 1228. I asked (twice) for a photocopy, but did not get one from them. If any of our members got this piece (or know who did), send me a photocopy and I will include it with the next issue.

## MEMPHIS MEETING MINUTES

In the last edition, I inadvertently left out the last page of Howard's wonderful Memphis meeting minutes. I have them attached, so you can put them with the rest.

## DELINQUENT MEMBERS

Attached is our membership roster showing 128 active members. We lost 30 members due to non-payment of 1995 dues. These now former members are listed below. If you know of them and we either made a mistake, or if you know why they dropped, let me know.

BEDDOWS, GARY T.  
BOURNIVAL, HERBERT  
BREDHOFF, RICHARD  
BYRGE, MARIO  
COLE, RICHARD G.  
DARR, GERRY  
EMERSON, F.  
ETTER, RONALD J.  
FRAGER, MD, STEVEN H.  
GELDARSKI, DEBORAH

GUETZOW, EUGENE A.  
HALPERN, HERMAN  
HINDSON, J. FRANK  
HOWARD, DAN  
KAGIN, PAUL  
KORIN, HAROLD  
KUGLER, KENNY  
LESICKO, DAN M.  
MARK, JOHN P.  
MARTINELLI, J.

McCONNELL, JR, C.E.  
MINNICK, DEBRA  
MOORE, ERIC  
MULLER, RALPH  
PHELPS, ROBERT K.  
PRINZINGER, J. RUSSELL  
ROCK, BARRY  
ROTHBERG, EDWARD M.  
SIMMONS, JOAN A.  
YORK, EDWARD L.

## NEW BOOK

One of our members, Mr. Fred Reed has recently had a book published you all should look at. It is *"Civil War Encased Stamps; The Issuers and Their Times."* It gives an excellent history of encased postage stamps and even gives a whole lot of biographical data on the issuers of them and Mr. J. Gault. It can be ordered from BNR press for \$60. Check the attachment for ordering information.

## EXHIBITING

Now is the time!! Begin planning for those exhibits for Memphis. Unless something happens, we will again be awarding plaques for the top three. We would like to have a lot of fractional exhibits as we do every year. More information on this will be in the next issue. Also, many of you are from the Texas area. The TNA show is again in Fort Worth and I am again serving as exhibit chairman. I would love to see some fractional exhibits here, besides mine. If interested, please let me know and I will send you information.

## **FCCB NEWS INDEX**

**I have finally done it!!!** I feel that one of our jobs is to not only promote our hobby, but to be its' historians as well. For that reason, I recently took to indexing the articles from past newsletters and others that I have in my personal files. Please look this over and let me know if you have any others or any of the ones I do not have a copy of and send them to me so they can be included. If you want to order copies of any of these, let me know which ones and I will do for \$0.05/page and \$0.55/ten pages of postage. I will warn you that these like the saying goes, "*good things come to those who wait*," the turnaround time will not be real quick. Sorry, but let me know if you have anything else to include in the index.

## **NEWSLETTER NAME**

Does anyone have a catchy new name we could use for our newsletter--like "*FCCB Notes*," etc? You know how there is "*The Numismatist*, *The Rag Picker*, etc," if you have a name you like, let me know and I will put it out for approval.

## **LIST OF ATTACHMENTS**

1. Roster showing 128 active members.
2. FCCB News Index
3. Page four of the 1995 Memphis meeting minutes.
4. Article about Spencer Clark's picture on the third issue five-cent note.
5. Article about the end of Fractional Currency.
6. Article about the use of postage stamps as money during the Civil War.
7. Article about use of tokens and store cards during the Civil War.
8. Story about a recent Stack's auction and the F.C. shield that hung in the San Francisco Mint.
9. Story on the new Encased Postage Stamp book.
10. New "*Payable in Postage*" Note.
11. Article from Scientific American about the new U.S. paper money.

FCCB INDEX TO NEWSLETTERS/FRACTIONAL ARTICLES  
27-Oct-95

FCCB YR	ARTICLE NAME	AUTHOR	JOURNAL	PUB DATE	#PG
1985	The Manufacture of Greenbacks		Scientific Am.	8/1864	2
1985	Dry Printing of Fractional Currency		Scientific Am.	2/1865	2
1986	Postage Stamp Currency	K. Troborgh	Scientific Am.	2/1863	1
1986	Frac. Curr.; Collections and Auctions	M. Gengerke	FCCB News		5
1986	U.S. Frac. Curr.; History of the Origin	G. Blake	Mehl Catalog	6/15/43	1
1986	Postal & F.C. Counterfeit Detection	M. Friedberg		4/79	3
1986	NBNCo. Corr. re: F.C. Difficulties	G. Jackson	Essay/Proof J.	#147	4
1986	F.C. Essays and Experimentals	M. Friedberg	Coin World	6/80	2
1986	Frossard Listing of 10/1/1893				4
1986	The Fractional Currency of the U.S.	B. Lowenstarm	Numismatist	5/33	2
1986	Counterfeit Fractional Currency	M. Gengerke	Rag Picker	4/86	2
1986	The Mystery of the 50ct Perf.14 Resolved	M. Friedberg	Paper Money	#105	3
1986	F.C. Plate Info.; 2d and 3d Issue	M. Gengerke	Paper Money	#42	7
1986	The Hidden Engraving on the F.C. Shield	B. Hughes	Paper Money	#41	6
1986	Postal Currency with Mint Envelopes	M. Friedberg	Catalog		2
1987	Ink & Paper Problems Plague Album Pages	W. Sharpe	Linns	8/87	1
1987	Postage Currency Envelopes	U.S. Patent Office		6/1869	4
1987	New Information on Fractional Currency	M. Friedberg	Paper Money	#28	4
1988	Riot Erupts Over Shortage of Small Change	F. Reed	Coin World	11/88	5
1988	Private Papers of the CSAs Most Wanted Man	R. Larkin	BankNote Rep.	11/88	3
1988	Stamps Served as Money during Civil War	R. Graham	BankNote Rep.	8/88	1
1988	The Inventor of Spider-leg Paper	B. Hughes	Essay/Proof J.	#175	2
1988	Philatelic Artifacts of Civil War Inflation	R. Graham	Linns	6/88	2
1988	Sutler Paper Scrip--A Listing	K. Keller		6/88	5
1989	Color Plays A Major Role in Stamp Collecting	S. Rod	Linns	6/89	1
1989	Frac. Notes; Early Solution to Coin Demand	Col. B. Murray	Coin World	7/89	1
1989	Watchable Treasurer Spinner	B. Hughes	BankNote Rep.	89	1
1989	Historical Background of Postage Currency	Hodder/Bowers	Cat. of EPS		4
1989	A Discussion of the Terms "ESSAY" and "PROOF"	G. Brett	Essay/Proof J.	#180	8
1989	William Newton & Co. (Postage Stamp Env.)				1
1989	ABNCo. Psychological Monoply		Fortune Mag	5/33	6
1989	Frac. Notes Fill Needs While Civil War Rages	M. Friedberg	Coin World	3/89	1
1990	The Story Behind Our Money	R.W. Bradford	RareCoin Review	#81	2
1990	National Customs Note	R. Hortsman	Paper Money	#150	3
1990	Ronald H. Kessler Sale	Sothebys	Catalog	3/27/90	10
1990	Spencer Morton Clark	B. Bolin	Paper Money	#135	3
1990	Spencer Morton Clark--Life/Time line	B.Bolin	Memphis Pres.		2
1990	Listing of Obs. Notes Payable in Post. Curr.				5
1990	The 25cent F.C. 5th Issue Type Note	R. Hatfield	Rag Picker	10/89	2
1990	Treasury Seals Draw Unexpected Response	J. Hotchner	Linns	1/90	1
1990	Getting Involved	B. Bolin		1990	1
1990	PMG Blair and His Postal Accomplishments	R. Graham	Linns	11/89	1
1991	History of the F.C. Presentation Books	M. Gengerke	ANA Anthology		7
1991	Bk Note Prfs Distinguished from BN Remainders	J. Blanchard	Essay/Proof J.	#190	3
1991	Many Paper Types Used to Produce Stamps	S. Rod	Linns	8/91	1
1991	Watermarks Part of Papermaking Process	S. Rod	Linns	9/91	1
1991	A Numismatic Journey Thru Steubenville	R. Carlton	Numismatist	2/91	2
1991	Paper Money Chemically Stable, not Durable	S. Maltby	Coin World	8/90	1
1991	Charles F. Ulrich, "Boss Cutter"	B. Hughes	Paper Money	#153	3
1991	Copper Nickel 3cent--Lobbyists Reward	R. Gierdroye	Coin World	6/91	1
1991	About F.C.C.Boyd				2
1991	Hand-Signed Fractional Currency	T. Cox	Rag Picker	4/91	3
1991	Fractional Currency Paper	M. Friedberg	Memphis Prsentation	6/91	5
1991	Stamps Used as Money During Civil War	H. Herst	Linns	1991	1
1991	Let's Collect Paper Money	N. Shafer			2
1992	Gengerke Says Paper Attractive Now	B. Moon	BankNote Rep.	11/92	1
1992	Cross Reference of Milton Numbers				4
1992	27th Annual Report of the Post Office Dept.	U.S. Postal Depart.	GAO	1862	3
1992	The Strange Saga of Spencer Morton Clark	T. Fitzgerald	CalCoin News	Sp. '91	4
1992	Old War Time Shipplasters		NY Times	1906/7	1
1992	A Century of Pioneering in the Paper Industry	Smith/Winchester	r Book	1928	19



1992	Civil War Postal Currency Envelopes	C. Buck	Am. Philatelist	8/90	2
1992	Portraits on U.S. Coinage: Living up to the Law	D. Ganz	Numismatist	5/92	4
1993	Stamps Used as Coins Popular with Hobbyists	N. Shafer	BankNote Rep.	7/93	1
1993	Aunt Sophie Thwarts Great Treasury Theft	B. Hughes	BankNote Rep.	9/93	2
1993	Development of the Spinner Signature	B. Hughes	Paper Money	#59	7
1993	W.S.Rosencrans, The Man Behind the Signature	F. Finney	BankNote Rep.	3/81	3
1993	Money Maker	G. Sweller	Boston, Inc.	1/93	3
1993	Shinplasters; Poor Medicine for Nations Woes	W. Breen	NNWeekly	7/72	10
1993	New Information on Fractional Currency	M. Friedberg	Paper Money	#107	6
1993	The Story of "Cranky Tom" Hale	B. Cochran	Paper Money	#165	4
1993	Capitols' Freedom Gets Major Facelift		Linns	5/93	1
1993	Entry of Women into Federal Job World	R. Baker	Smithsonian	7/77	6
1993	Collecting of Paper Money Focus of Video		Coin World	4/93	1
1993	Correspondance Pinpoints Printing Firm	M. Friedberg	Coin World	6/83	1
1993	How Proofs and Essays Get Into Collections	M. Laurence	Linns	5/87	2
1993	U.S. Currency Printed on CSA Watermarked Paper	G. Jackson	Essay/Proof J.	#107	2
1993	Dry Printing of Fractional Currency		Scientific Am.	2/1865	2
1993	Pete McCartney, Counterfeiter	T. Eagan	Paper Money	#163	7
1993	Many Factors Lead to Paper Degradation	S. Maltby	Coin World	1/93	1
1994	Try Anything Tactic Obvious in Frac. Curr.	B. Hughes	BankNote Rep.	11/94	2
1994	U.S. Civil War Proved Need of Currency	B. Hughes	BankNote Rep.	9/94	2
1994	Paper Collectibles Face Risks w/o Conservation	S. Maltby	Coin World	5/94	2
1994	Collectors Attracted to Fractionals	M. Byrge	BankNote Rep.	5/94	1
1994	Fractional Currency; Legacy of Civil War	B. Hughes	BankNote Rep.	5/94	4
1994	The Story of the Ivy Mill	C. McDonough	Linns	4/67	2
1994	These Stamps Masqueraded as Coins	H. Herst	Linns	3/94	1
1994	Paper Fractional Money of the U.S.	D.W. Valentine	Numismatist	6/15	5
1994	Dry Printing Introduction Created Varieties	K. Lawrence	Linns	12/93	1
1994	Engraving of P.M. Demands Steely Eyed Skill	M. Orzano	Coin World	11/93	1
1995	S. Clark's Portrait Result of Treasure Gaffe	B. Hughes	BankNote Rep.	1/95	2
1995	Counterfeiters and Mr. Stanton	B. Hughes	Paper Money	#173	5
1995	Silk Handkerchiefs the Medium	M. Friedberg	Coin World	6/95	2
1995	Money in the Common Citizens Pocket--1869	H. Salyards	RareCoin Review	#100	2
1995	Honest John Burke	J. Fisher	Paper Money	#176	2
1995	Watermark is a Small, but Important Detail	S. Rod	Linns	3/95	1
1995	Frac. Curr. Shields Remain Impressive Finds	B. Hughes	BankNote Rep.	5/95	3
1995	Spinner Did Deserve Name "Beloved Beuracrat"	B. Hughes	BankNote Rep.	3/95	3
1995	Grant--Sherman; The Note That Never Was	B. Bolin	TNA News	4/95	1
1995	Protecting the Greenback	Scharfrik/Church	Scientific Am.	7/95	7
1995	Tokens, Store Cards Provide Glimpses	P. Gilkes	Coin World	7/95	2
1995	Port. of Treas. Worker on US Note Caused Stir	B. Hughes	BankNote Rep.	7/95	2
1995	Postage Stamps Used As Money in Civil War	R. Graham	Linns	7/95	2
1995	Fractional Issues Ended with Post--War Phaseout	B. Hughes	BankNote Rep.	8/95	2

#### B. Bolin Personal Files

Bank Note Printers Ready for Union Government	B. Hughes	BankNote Rep.	7/94	4
Shermans March Ended Note Issuance	B. Hughes	BankNote Rep.	5/91	5
Postal Notes Created by Civil War Necissity	B. Hughes	BankNote Rep.	94 Supp.	2
Fractional Notes Early Solution to Coin Demand	Col. B. Murray	BankNote Rep.		1
Postage Currency had Security Innovation	M. Friedberg	BankNote Rep.	7/86	1
U.S. Postage and Fractional Currency	J/N Wilson	Centinel, The	Fall 80	7
Fractional Currency Club Forms		Coin World	12/84	1
Many Factors in Postage Currency Failure	D. Winter	Coin World	6/85	8
Mint Assayers Take Pattern Initiative	D. Winter	Coin World	5/85	6
Civil War Hysteria Triggers Financial Crisis	D. Winter	Coin World	5/85	6
Note Surcharges Remain Mystery	M. Friedberg	Coin World		1
Unique Face Essays Traced to Clark	M. Friedberg	Coin World	6/80	2
Unpopularity of Shinplasters Gave Birth to 3Cent	R. Giedroye	Coin World	6/91	2
Encased Postage		Curr. Dealer N.	11/83	2
Blue Ends and Brown Seals		Curr. Dealer N.	2/84	2
A Look at Encased Postage		Curr. Dealer N.	11/80	2
The Extremely Elusive Justice Series		Curr. Dealer N.	10/83	2
Fractional Currency the Fifth Issue		Curr. Dealer N.	1/87	2
Fractional Currency Specimens		Curr. Dealer N.	9/81	2
Encased Postage	Iskowitz/Linnet	Curr. Dealer N.	11/80	1
Fractional Currency Freq. Asked Questions	L. Glazer	Curr. Dealer N.	2/83	2
Fractional Currency Specimens	T. Knebl	Curr. Dealer N.	9/81	2

Fractional Currency Third Issue Part I	T. Knebl	Curr. Dealer N.	12/85	2
Fractional Currency Third Issue Part III	T. Knebl	Curr. Dealer N.	4/86	2
Fractional Currency Third Issue Part II	T. Knebl	Curr. Dealer N.	2/86	2
Fractional Currency; The Fifth Issue	T. Knebl	Curr. Dealer N.	1/87	2
Postal and Frac. Curr. Counterfeit Detection	M. Friedberg	FCCB News	4/79	3
Paper Change or Fractional Money	J/N Wilson	MichMatist	Winter 84	1
Fractional Currency Sales/Status	B. Bolin	Paper Money	#161	1
Preserving Your Collection	L. LaVertu	Souv. Card Journ	Fall '80	3

---

I Need Copies!!

---

Paper for Second Issue Fractional Currency	M. Friedberg	Paper Money	#156
Antiquated Money		Paper Money	#82
Counterfeiting of U.S. Fractional Currency	W. Koster	Paper Money	#42
Postage Currency Destroyed	F. Daniel	Paper Money	#5
Postage Due, The U.S. Postage Curr. Story	T. Knebl	Paper Money	#18
Stamps are not Legal Tender, or are They?	F. Daniel	Paper Money	#18
Varieties and Sub-varieties of P.C. and F.C.	A. Cohen	Paper Money	#2
Development of the Spinner Signatures	B. Hughes	Paper Money	#14

A member of the audience asked about the many different types of the "1" and the "a" position characters on some notes. (Note: The characters "1" and "a" were placed on the plates of some notes to help the printers determine plate wear. The "1" was placed at the center left side of each of the notes on the left side of a plate, left from the perspective of viewing from above. The letter "a" was placed in the lower left corner of each of the notes in the top row of the plate, again as viewed from above.) The panel responded that there were many different forms and locations of these position characters. There were many different "1"s and "a"s because they were cut directly into each plate manually; they were not transferred onto the plates along with all the other obverse designs.

Discussion began on future publications of reference works for fractional currency collectors. The nature and form of future reference works would be determined largely by the evolution of electronic software and hardware. The issue currently at hand was that of publishing new research immediately, in black and white, or waiting until the cost of publishing in color falls. A related issue was whether publication in color was actually necessary. This discussion was postponed to a later date, since time "ran out". President Hales adjourned the meeting.



# Portrait of Treasury worker on U.S. note caused stir

## Influential congressmen protested Spencer Clark's portrait on five-cent note

By Brent Hughes

A few years ago *Bank Note Reporter* carried ads that offered dollar bills bearing portraits of celebrities such as Elvis. I still have one of them that has a portrait of Santa Claus I believe one company offered to put any customer's portrait on a dollar bill if he sent in his picture with the required service charge.

Since the custom portrait was attached with a peel-off adhesive over the portrait of George Washington on a genuine note, the Secret Service did not object. The fad became so popular that a professional photographer somewhere put his portrait on all the bills in his wallet and had a lot of fun with them.

Did you know that it can't happen in real life? Even if you were a famous American such as an ex-president, it would be impossible for you to ever see your portrait on our currency. There is a law which states that persons portrayed on our paper money must be deceased.

The law was passed by angry congressmen during the Civil War era after a Treasury Department employee named Spencer Clark put his own portrait on a newly issued Fractional Currency note. The story goes back to the earliest days of the Bureau of Engraving and Printing.

When we read our newspapers today and marvel at the rough-and-tumble politics being played out in Washington, it is hard to imagine that things were much worse in the 1860s. The 20 years prior to the Civil War saw vicious plotting among the various factions and both

houses of Congress saw incidents of physical violence take place as tempers flared.

Some of the roughest infighting took place as representatives of the New York City area who had received large campaign contributions from the giant bank note companies tried everything to block the establishment of the Bureau of Engraving and Printing.

The beginning of the Civil War created a financial crisis in which the Union had to issue paper money for the first time. The private companies based primarily in New York City had brought bank note engraving to a fine art, turning out millions of exquisite notes for anyone who wanted them. The collecting of these obsolete notes is, of course, a major hobby today.

Over time these private companies grew and combined so that by 1861 the National Bank Note Company and the American Bank Note Company dominated the industry and made sure that their interests were looked after by skilled lobbyists in Washington. Many politicians owed their elections to the bank note companies and thought nothing of calling Treasury officials on the carpet for trivial violations of what they felt were their constituents' turf.

When rumors began circulating that the Treasury Department was planning to print paper money for the first time, the private firms felt their very existence was threatened and reacted accordingly. For the next 15 years they used every

possible tactic to convince the Congress that a government facility was unnecessary.

Then as now the custom was to identify the individuals who were causing the problem and do whatever was required to discredit them. This activity focused on Treasury Secretary Salmon P. Chase, Treasurer Francis E. Spinner and Chief Engineer Spencer Clark.

Chase was a very intelligent and effective cabinet member who ran the Treasury Department with a firm hand. President Lincoln often turned to him for advice on how the enormous expenses of the war could be paid. Chase's problem was that he wanted to be President of the United States in the worst way and this obsession eventually led Lincoln to ask for his resignation. For the first three years of Lincoln's term, however, Chase enjoyed the full confidence of the President and he was almost above criticism.

Spinner was a very likable person who quickly endeared himself with reporters as well as the public. His habit of sleeping in his office and roaming the corridors of the Treasury Building checking the vaults and entrances earned him the nickname of "Watchdog of the Treasury" and people often dropped by to get Spinner's unusual autograph.

Both Chase and Spinner were experienced politicians who knew their way around Capitol Hill. They talked to reporters and invariably got their views into the newspapers. The public ignored the criticism of Spinner when he began

hiring female employees to take over the clerical tasks of the Department, even when critics circulated rumors of wild parties taking place on the night shift.

In this atmosphere only Spencer Clark was vulnerable. He did not care for politics or even making friends. He was the "can do" man at Treasury who was always eager to carry out any suggestion that Chase and Spinner might make as they tried to set up facilities to print paper money.

The stately Treasury Building was designed to be filled with offices, so veteran bureaucrats who had enjoyed their quiet environment suddenly found themselves startled by loud noises as Clark and his men knocked holes in stone walls or erected strange devices in the interior courtyards. Clark literally took over the basement and attic of the building as he used every square foot of space that he could find to install his presses and work tables.

In previous articles we traced the events which led to the production of the first U.S. currency and how the Treasury solved a critical coin shortage by designing "paper change," tiny notes called Fractional Currency.

The first notes were printed by the private companies in New York City while Spencer Clark and his men worked to set up the National Currency Bureau to take over the printing. They were backed by Chase and Spinner, both of whom believed that the private companies were overcharging for their products.

The Treasury Building often shook as Clark cut holes in floor and walls and the unpleasant smell of strange chemicals crept into the offices as experiments took place in the basement.

Clark led efforts to develop a security paper to hamper counterfeiters who were a serious problem at the time. He also experimented with alternative printing methods that required high-pressure steam. Chase and Spinner rejected complaints from employees by pointing out that the nation was at war and drastic actions had to be taken.

Up to this time, there had been no problems in selecting portraits or vignettes to be used on the paper money. Washington and Jefferson were already being used on postage stamps at that time and the stamp images were simply transferred to the first issue of Fractional Currency. In fact, these were actually called "Postage Currency," some even having perforated edges.

The Second Issue used a portrait of Washington on all the denominations and no one objected. Most people felt that the Treasury would probably continue to use former presidents on any financial paper and George Washington certainly was a good choice.

When the Third Issue of Fractional Currency was introduced in February of 1865, the public looked at the new three-cent note and was not surprised to see Washington used again. The new 10-cent note also bore a portrait of the first president, the new 25-cent note used a portrait of the new Treasury Secretary William Fessenden and one of the 50-cent notes featured Treasurer Francis Spinner.

There was little or no criticism of these portraits, but when people examined the new five-cent note they wondered who that bearded gentleman might be. Inquiries to the Treasury Department revealed his identity — he was



This 25-cent note shows William Pitt Fessenden, then Secretary of the Treasury. Little protest was made over the placement of his portrait on this note, unlike the fuss created over the use of Spencer Clark's portrait on the five-cent note.



Francis Spinner's portrait appears on this 50-cent note. It accompanied the notes bearing Fessenden and Clark in the third issue of Fractional Currency, which was introduced to the public in 1865. Fessenden and Spinner, however, had many friends in government, while Clark was relatively unknown on Capitol Hill, so no fuss was made over their appearances on notes.



Spencer Clark, superintendent of the National Currency Bureau.

Most people had never heard of Clark and there was some public criticism that a famous American should have been selected. But this criticism was mild compared to the cries of outrage which emanated from Capitol Hill. To the congressmen from New York, Clark was the enemy. He had been the ringleader in efforts to take away the lucrative contracts that the private companies had enjoyed. Aside from that, he had never served in Congress nor did he have any friends there.

The congressmen considered Clark a laborer, a man who got his hands dirty working on machinery in the basement at Treasury. It was outrageous they screamed, that this man would have the gall to put his own portrait on a piece of our paper money.

Spinner tried to defend his friend Clark, but he was embarrassed because there was apparently no written authorization for Clark to put his picture on the note.

I have not been able to find any detailed account of why Clark's portrait was used. Perhaps it was one of those bureaucratic foul-ups in which everyone meant well but the result was unfortunate. I can suggest several possibilities that one can ponder.

We know that Clark had been given authority to use Spinner's portrait on a note, so one of Clark's engravers was assigned to create the rendering. We don't know if he worked from a photograph or if he made preliminary drawings from live sittings. If it was the latter, it is possible that Spinner may have good-naturedly said something to the effect that Clark was more deserving of the recognition than he was. Thus the engraver may have left Spinner's office with the impression that the Treasurer intended to make his idea an official recommendation. Later on, when the name Clark was mentioned, the same engraver may have just jumped to the conclusion that Spencer Clark was the intended portrait.

I also believe that in the normal course of getting final approval of each note design, the proofs of the five-cent note would have gone to Spinner and possibly to the Secretary of the Treasury. Both of these men would have recognized Spencer Clark and if his portrait was not to be used, why wasn't something said?

There is another account that says that a historian had suggested that several pairs of famous Americans be honored by placing their portraits on a note. One such pair consisted of Generals Grant and Sherman, who had contributed so much toward the Union's victory in the Civil War. This suggestion was adopted and the plates had been completed. Another pair was Lewis and Clark, the explorers. Could it be that someone at Treasury got that Clark confused with Spencer Clark and caused the error?

We may never know precisely what happened but we do know that when Spencer Clark's portrait showed up in circulation, the *New York Times* got upset and ran several editorials criticizing the fact. The congressional delegation from New York also got into the act and did everything they could to embarrass the Treasury Department.

In the face of all this protesting, the congressmen may have thought that the notes in question might be withdrawn, but when this did not happen, they sought a legislative remedy. An Act of Congress dated March 3, 1865 authorized the minting of a three-cent coin made of nickel. This was followed on April 7, 1866, by a provision in an appro-



Luban Heath, publisher of "Heath's Counterfeit Detector," which was intended to protect businesses from counterfeiters, was allowed to picture the 50-cent Spinner note, above, and its counterfeit, below. Counterfeiter "Long Bill" Brockway passed thousands of these fakes, playing off of the public's belief that no one would bother to copy such a low denomination.

priation bill for the Treasury Department which stated:

"For plates, engraving, printing and paper for national currency notes, two hundred and fifty thousand dollars: Provided, That no portrait or likeness of any living person hereafter engraved, shall be placed upon any of the bonds, securities notes, Fractional or Postal Currency of the United States."

The words "hereafter engraved" had obviously been inserted so that Treasury could not be forced to destroy expensive plates that had already been completed. This meant that the Clark note could continue to be printed and issued, much to the chagrin of the New York congressmen who were really after Clark.

They finally accomplished their purpose when Congress passed the Act of May 17, 1866. It provided for the mint-

ing of a five-cent coin and prohibited the issue of paper money in denominations of less than 10 cents. It was this legislation that finally removed Clark's portrait from our currency.

Clark finally resigned in 1868 and completed his career with the federal government in another department. He died in 1890.

Historians have recognized Clark contributions to the establishment of our present Bureau of Engraving and Printing. They cite one of his recommendations still in Treasury archives:

"The work should all be executed in a fireproof building, to be erected and exclusively occupied for this purpose. A substantial but not costly structure should be built on the grounds adjacent to the Treasury Building, and communication between it and the room occupied by the Treasurer of the United

States should be made by a subterranean passage between the two buildings through which the printed values could be transmitted thus avoiding such risk of transmission as attends the present method of carrying the finished money through the main halls and passages of the Treasury, to which both the public and the Treasury force have free access.

The building was eventually built although it took the Congress a long time to admit that Clark was right. The red brick structure still stands and is used for other purposes. It was succeeded by the modern building closer to the Potomac that now houses the most sophisticated of devices to produce our paper money. Many of these devices had their beginning with ideas conceived by Spencer Clark. He was a man ahead of his time who is now receiving the recognition he deserves.

### CSA & OBSOLETE BANK NOTES

My 48 page catalog contains thousands of bank notes, common to rare. A huge listing of CSA bonds, a nice group of checks & drafts, and an expanded reference book section are all contained in this issue!

As always, I'm paying top prices for bank notes & related material. I want to buy your notes! Turn your duplicates into quick cash!

Send \$3.00 (refundable with order) for same day, first-class mailing of this jam-packed latest issue!

**GENE F. MACK**

P.O. Box 60991  
Jacksonville, FL 32236  
(904) 771-4796

Send (VOICE or FAX)

### FOR SALE

1. Obsolete paper money: "broken bank notes", scrip, depression, advertiser notes, college currency, sutler, Civil War, etc.
2. U.S. Currency: Large, small (blocks listed), fractional and errors.
3. Stocks & bonds including a new offering of automotive and banking.
4. Books on paper money - Huge selection of all categories incl. world, C&C, etc.

Send \$1 for each list, \$3 for all. If you state your specific collecting interests, we will include future offerings at no charge.

**Lawrence Falater**

ANA LIFE MEMBER 307 - 40 YEAR MEMBER

Post Office Box 81, Allen, MI 49227-0081 (USA)  
(517) 869-2541 9-9 Any Day • 24 Hr. FAX: (517) 869-2994



# Fractional issues ended with post-war phaseout

By Brent Hughes

As a Civil War substitute for coins, the first three issues of the U.S. Treasury's Fractional Currency served our nation well. The small pieces of paper money in denominations from 30 to 50 cents were welcomed by a public which despised the postage stamps, chits and other items that were being used as change.

The small notes had several disadvantages. They were easily misplaced, became dirty, burned in house fires or simply wore out in circulation. People en-

dured them as a wartime measure, but they longed for the day when the government would provide coins again.

The Treasury Department went through a difficult time during the war as it struggled to set up what is now called the Bureau of Engraving and Printing. The private bank note companies that had produced our currency during the private banking era prior to the Civil War fought to survive, but they probably knew that the U.S. government would eventually print and issue all of our nation's currency.

The public, which had been suspicious

of paper money for decades, gradually began accepting U.S. paper money and the stable banking system which is with us today.

Most of us are familiar with the political turmoil of the post-Civil War years, but the average citizen was not too concerned about it. All he wanted was for his life to get back to normal in area of daily life such as shopping. Paper money in denominations of \$1 and up was fine, but for transactions of less than \$1, people preferred coins.

Treasury officials knew this and acted quickly to get the U.S. mints into full production. This was easier said than done. There were no coins anywhere for all practical purposes, so it was difficult to take care of everyone's needs. The states of the former Confederate States of America were back in the fold and had to be "re-stocked" with coins and currency. The American West was being settled, and all of the pioneers needed a medium of exchange. The populous northeastern states by themselves required a tremendous number of coins.

Under the circumstances, it was good that Treasury officials decided to take no chances. They continued to issue Fractional Currency while getting the mints up to speed, and as coins became available they slowly phased out the fractional notes, which took until the Fifth Issue of Fractional Currency in 1874.

The Third Issue had been the culmination of Spencer Clark's experiments with anti-counterfeiting features. The notes had bronze powder overprints designed to defeat the camera film then available, and special types of paper had been used and discontinued. Clark had

topped off his efforts by putting his own portrait on the five-cent note. This brought the wrath of Congress down upon his head. The incident led to the passage of a law forbidding the use of portraits of living persons on our paper money, a statute that is still in effect today.

Now the Treasury could catch its breath and make long-range plans to print currency. The decision was made (perhaps at the suggestion of New York congressmen) to sign contracts with the National Bank Note Company and the American Bank Note Company, both in New York City, to take over the bulk of the work.

The two companies printed all of the backs and most of the faces of what we now call the Fourth Issue. There were four denominations — 10 cents, 15 cents, 25 cents and 50 cents. The notes were beautifully printed on a new type of bank note paper containing silk fibers. For the first time, the Treasury Seal was used on these notes. The color varies from pale pink to red in most cases, giving today's collectors something unusual to look for.

The Treasury Department wanted no more controversies about the individuals who were portrayed on the notes. For the 10-cent note, a bust of Liberty was chosen. For the 15-cent note, a bust of Columbia was used. The Treasury felt it could not go wrong by specifying that George Washington be portrayed on the 25 cents, and for the 50-cent note, a fine vignette of Abraham Lincoln was made.

Unfortunately, counterfeiters, who surprised everyone by turning out beautiful copies of fractional notes, soon flooded the cities with thousands of fake

50-cent Lincolns, so the Treasury fought back by releasing a new 50-cent note bearing the bust of Edwin Stanton, who had recently died.

When this note was also counterfeited, it was replaced with a third design bearing the portrait of Samuel Dexter, who had been Secretary of the Treasury under John Adams.



Much Fractional Currency survived the Civil War era and was preserved by collectors. Sometimes, even rare uncut blocks, as above, and strips can be found.



The mints got squared away and by 1870 were turning out great amounts of coins. If we examine the official reports of production of just dimes and quarters, we can see the great progress that was made. In the year 1870, for example, the mints made slightly over a half million dimes and about 96,000 quarters. In 1871, they made over 1.2 million dimes and almost 161,000 quarters. The year 1872 showed large increases, with over 2.6 million dimes and about 290,000 quarters.

We can see that the availability of all metals was improving quickly, and the Treasury was adding more coinage machinery and workmen. Startling improvement in 1873 resulted in 4.4 million dimes being made, along with over 1.6 million quarters.

By the end of 1875, it was obvious that it would be a banner year. The mints turned out an astounding 24 million dimes and over 5 million quarters. The money supply was beginning to fill demand, and, if all went well, officials could see that Fractional Currency would not be needed much longer. In that year, production of the Fourth Issue fractional note issues ended with a total of \$166 million represented on paper.

Once again, Treasury took the conservative approach. There would be a Fifth Issue of Fractional Currency, but the project would be greatly simplified. There would be just three denominations — 10 cents, 25 cents and 50 cents.

The Bureau of Engraving and Printing was able to make all of the faces, with two private companies sharing the backs. The Columbian Bank Note Company of Washington, D.C., made the backs for the 10-cent and 25-cent notes and the firm of Joseph R. Carpenter of Philadelphia handled the 50-cent notes.

Once again, the Treasury made safe selections for the men to be portrayed on the notes. For the 10-cent bill, a portrait of William M. Meredith was selected, his only claim to fame apparently being that he had served as Secretary of the Treasury from 1849 to 1850.

Another former Treasury Secretary, Robert J. Walker, was chosen to appear on the 25-cent note, but he had a past that most people never knew about. He had a lot of experience in various fields and during the Civil War had been chosen by Treasury Secretary Salmon Chase to go to Europe on two very sensitive missions. He was sent to attempt to destroy the credit of the Confederate States of America with Great Britain and to try to borrow \$250 million in Germany, which Chase desperately needed to finance the Union's military expenses. Walker managed to accomplish both missions. Someone at the Treasury apparently remembered.

For the 50-cent note, a fine portrait of William H. Crawford was engraved. Crawford had been very active in his day, serving as Secretary of War and Treasury from 1815 to 1825. One refer-

ence book says that he was a very prominent politician at one time but had since faded.

All three notes are straightforward designs. The 10-cent note provides some interest for collectors, in that the Treasury seal is printed in both red and green, and the key on the seal comes in two lengths, now called "short key" and "long key" for obvious reasons. Beyond

that feature, there is not much to study unless one is interested in the various shades of ink that can be found. The green ink ranges from yellow-green to blue-green and the red ink varies from pink to vivid red.

By 1876, there were enough coins in circulation to keep everyone happy, so the Treasury Department did not request funds from the Congress for any more Fractional Currency. The Fifth Issue terminated on Feb. 15 of that year, and an interesting chapter in America's financial history came to a close.

The thing that has always fascinated me about Fractional Currency is how much of it has survived and is still available for collectors. Obviously, someone put away quite a few uncut sheets, and even some of the fragile sheets with perforations have survived. If the subject is of interest to you, you might locate a copy of *A Guide Book of United States Fractional Currency*, by Matt Rothert, Whitman Publishing Co., 1963. Among those who contributed to the book are

Chet Krause, Eric Newman and Neil Shafer.

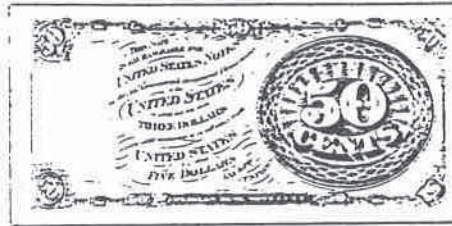
In his introduction, Mr. Rothert points out that, during the 14 years of issue, about \$369 million of Fractional Currency was printed. A collector today can form a denominational set with only six notes or a type set of only 25 notes. But if a person really wants to get into the study of this fascinating field, the sky is the limit. The original sheets were cut into strips, blocks and pairs, while the more common types can still be found in banded packs.

Spencer Clark produced hundreds of experimental notes as he tried different papers, strange overprints, anti-counterfeiting devices and whatever else

crossed his fertile mind. Amazingly, many of these notes survived and can be collected today, if you have a fat wallet.

As you might expect in today's market, the better the condition, the more it costs. If you want the very best — a flawless crisp uncirculated gem specimen — you can find it if you look long enough. Such notes are few and far between, however, so be prepared to pay a premium price.

I do hope you read the books first. Knowledge is the key to greater enjoyment of whatever you might collect, but it is absolutely essential in order to collect Fractional Currency. One thing that you might also enjoy is displaying your notes at your local library. I find that the general public is very much interested in the time when citizens had to get by with change made of paper.



Counterfeiters caused serious problems by flooding the cities with excellent copies of the 50-cent Lincoln note. The Treasury fought back by releasing the Edwin Stanton note. When it, too, was counterfeited, the Dexter note was released. The tiny fibers which were imbedded in the paper as an anti-counterfeiting measure can be easily seen on the Dexter back.



# Postage stamps used as money in Civil War

The hobbies of stamp collecting and coin collecting have many points where they overlap. Usage of postage stamps as small change in the

## Postal History

By Richard B. Graham

Civil War is a prominent example.

I wrote about this in the Postal History column of Aug. 22, 1988, and illustrated examples of encased postage stamps. Encased stamps are listed both in catalogs of United States money and in the *Scott Specialized Catalogue of United States Stamps*.

But the practice of using stamps as money didn't start with encased stamps.

When I wrote about the subject in 1988, I noted that the practice started with people using small envelopes containing a designated value in unused postage stamps in lieu of small change.

I didn't discuss that aspect further because I assumed that the envelopes were not the kind of thing that anyone would catalog. I've just found out differently.

Cover auction dealer David G. Phillips sent me photocopies of about 50 of the small envelopes, all with printed designs indicating

their purpose and sponsorship. Some of the envelopes are shown in Figures 1 and 2.

In addition, as Ken Gilman of the Phillips organization informed me, Krause and Lemke's *Standard Catalog of*

*United States Paper Money* (13th edition, Krause Publications, edited by Robert E. Wilhite) has a listing of the envelopes.

As I pointed out in the 1988 column, the envelopes

and their successors (encased postage stamps and postage currency) were an example of Gresham's Law: bad money drives good money out of circulation.

The opening of the Civil

War started inflation spiraling. People hoarded the gold and silver coins in circulation and as a result created a shortage of them.

Whenever they acquired money they felt wouldn't maintain its value, such as the notes of private banks or foreign coins made of precious metal they felt was overvalued, they spent that money as soon as possible in

fear it would depreciate further.

In the meantime, the shortage of small coins used to make change was met in some locations by unused postage stamps placed in the small envelopes such as are shown in Figures 1 and 2.

While I assume that many envelopes without printing also were used, those with printed faces (and many with



Figure 1. These six postage stamp envelopes were sold to hold unused United States postage stamps being circulated as small change, circa 1862-63. The ones in this group, furnished by envelope printers such as Leach of New York City, probably were sold to stationery stores to retail to those who wished to provide their own stamps as money.

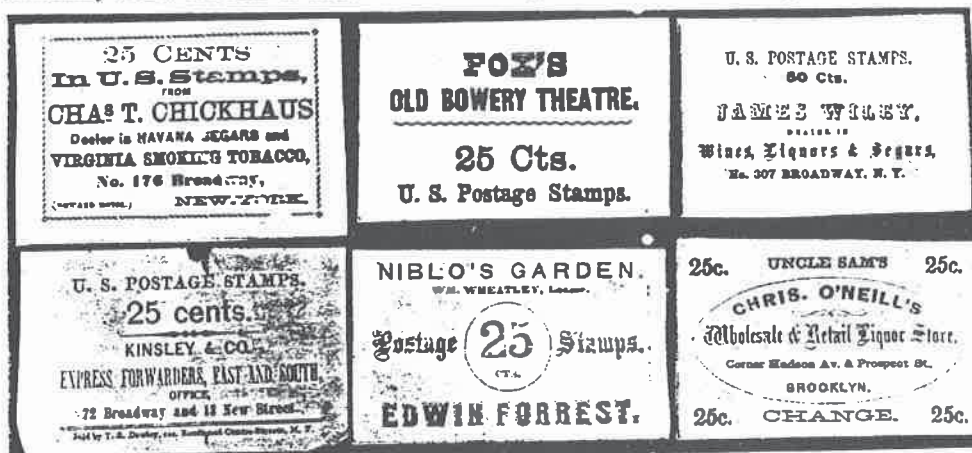


Figure 2. These six postage stamp envelopes bear printed advertising of firms other than the envelope printers. These envelopes probably included stamps when they were offered as change to those tendering money for the merchandise or services of the advertisers.

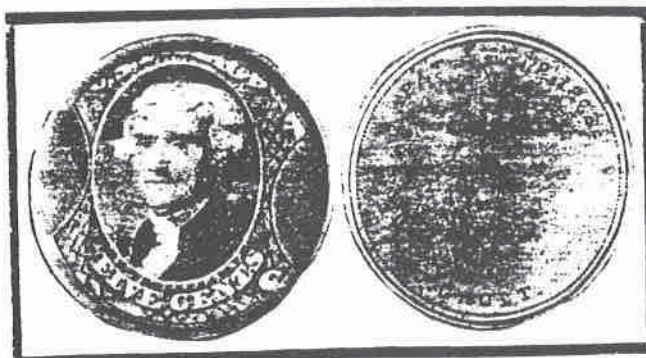


Figure 3. An encased postage stamp (shown front and back) used as small change during the Civil War.



Figure 4. Postage currency, issued by the U.S. Treasury in 1862. The face value of the pictured overlapped stamp designs (they are not actual stamps) represented the amount of the note. The notes undoubtedly stemmed from the use of postage stamp envelopes.

the back also printed) appear quite collectible.

Made up in sizes ranging from 65 millimeters to 75mm wide and from 35mm to 45mm deep, the envelopes were printed in many designs, often in multicolor but mostly in blue or red, and on colored paper.

I have divided the illustrations here into two types: those probably offered for sale by envelope printers (Figure 1) and those with advertisements of other than envelope printers (Figure 2).

The envelopes shown are selected from about 50 examples, but none contain any of the stamps.

Even if the stamps were present, they would probably not be collectible. The frequent exchange (and checking to see that all were there) caused the stamps to be stuck down and probably made them unusable to mail letters.

The envelope denominations were mostly, as is printed on their faces, 25¢ (com-

monest) and 50¢, with considerable 10¢ and 75¢ values also often seen.

Speculation as to what 1861 stamps they contained leads us to assume that 10¢ stamps and 5¢ stamps were common, although it is amusing to suggest that a 24¢ stamp plus a 1¢ stamp also might have been used frequently.

The Krause catalog illustrates a patriotic design envelope that pictures two 10¢ stamps, a 3¢ and a 2¢ Black Jack of 1863. The envelope apparently portrays the original stamps that were in it.

Values for the envelopes, as listed in Krause, start at \$250, but those values are not based on the collector value of the stamps they originally contained.

The envelopes may have been the first substitute for the small change that had disappeared from circulation, but there soon were other solutions.

These are shown in Figures 3 and 4, and were described in the 1988 column. Figure 3 shows an example of an encased postage stamp, this being the brown 5¢ Thomas Jefferson of 1863, Scott 76, cataloged as encased postage stamp No. 96 in that section of the Scott catalog.

The case bears the imprint of J. Gault of Boston, who patented the design.

Figure 4 shows an example of the U.S. Treasury Department's answer to the coin hoarding problem — postage currency.

Stamps included in the small envelopes and in the cases obviously were sold by post offices. The Post Office Department had no way of accounting for the money received for these stamps, even though the probability of the stamps ever being used for postage was rather slim.

Most of the stamps became stuck together, dirty or torn, or otherwise were unusable after some time in circulation.

Seizing on the idea, the Treasury Department issued

its own version of postage stamps as money. This was called postage currency, or later, fractional banknotes.

The postage currency notes reproduce postage stamp designs. They were available only from the Treasury Department, so they could be considered a normal emission of paper money. Examples of the 25¢ and 50¢ values are shown in Figure 4.

As may be seen, the reproductions of the stamps on the notes show the designs overlapped.

Postage currency notes, issued in August 1862, were succeeded in October 1862 by fractional currency notes of more conventional design and did not show stamps. This probably was much more to the liking of Treasury Department officials.

A group of postage stamp envelopes, including the representative examples pictured in Figures 1 and 2, are to be sold in a David G. Phillips auction early next year.

Some of the envelopes shown in Figure 1 have patriotic designs. I wonder how these will sell in comparison to those of other designs.

One of the envelopes shown in Figure 2 has the advertising of an express company. That, too, may have appeal to the postal history collector.



# Tokens, store cards provide glimpses at Civil War money alternatives to small change

Die varieties often offer collecting challenges

By Paul Gilkes  
COIN WORLD Staff

Collectors fascinated with the machinations surrounding the American Civil War will be drawn to specific collectibles of the era — coming under the category of Civil War tokens.

There are two separate major areas of token collecting, and through research by George and Melvin Fuld published by the Civil War Token Society, two extensive reference works detail the collectibles contained therein.

*Patriotic Civil War Tokens* delves into an area of emergency currency employed during the Civil War monetary shortage. The currency took the form of small copper tokens with patriotic themes which first circulated in large quantities beginning in 1862, but which had actually first been introduced before war was declared. There are more than 1,800 different varieties, with new die pair combinations discovered in recent years.

*U.S. Civil War Store Cards* catalogs those metallic pieces bearing the merchant's initial or names and the type of business and address on one or both sides. There are more than 8,500 store cards known, issued by approximately 1,500 merchants. They are catalogued by state, city and merchant.

Both reference works identify specimens by die combinations.

With the country divided and its monetary system in shambles, President Lincoln was confronted with having to pay the costs of an unpopular war by raising taxes, an always unpopular solution, or issuing paper money without secured backing other than the federal government's word.

During the first two years of the war, many Americans lost confidence in the Union government and the economy floundered. The uncertainty about what the future would bring with the war raging

uncontrollably encouraged many Americans to hoard gold, silver and even copper as the value of paper currency plummeted.

Soon, all metallic coins were missing from circulation as citizens speculated on the anticipated rise in price of all metals.

*"With the country divided and its monetary system in shambles, President Lincoln was confronted with having to pay the costs of an unpopular war by raising taxes, ... or issuing paper money without secured backing..."*

The hoarding of gold and silver at one point propelled the Treasury Department to suspend redemption of demand notes (unsecured paper money popularly called "greenbacks") by specie payment. The Legal Tender Act of March 1862 required the acceptance of greenbacks whenever they were offered as payment, with few exceptions.

All gold, silver and even copper-nickel coins quickly disappeared from circulation by late 1862. Hardest hit by the coin shortage, were

merchants and their customers in major metropolitan areas of the North. There were no means to make the necessary change. Merchants had to rely on their own ingenuity in developing monetary substitutes.

The first substitute was the U.S. postage stamp itself, followed by New York and Boston businessman John Gault who invented encased postage — U.S. postage stamps denominated from 1 to 90 cents in a brass encasement with a mica window on the obverse, and the merchant's advertisement on the reverse.



**DIE SINKER** and engraver Robert Lovett Jr. of Philadelphia is best known for preparing the dies and striking the 1861 Confederate pattern cents.

Cheaper production costs for the metallic Civil War tokens and a Post Office Department edict banning the sale of postage stamps for use as currency pushed the encased postage stamps into obscurity.

Measuring slightly more than the 19-millimeter diameter of the Indian Head bronze cents first struck in 1864, patriotic Civil War tokens and Civil War store cards were well accepted by the populace which disdained the feel or security of paper or cardboard scrip. The 25 million or so pieces produced for circulation more than filled the needs of commerce.

The first such tokens first made their appearance in Cincinnati in the fall of 1862, with New York following in the spring of 1863.

The tokens were commonly accepted for their stated or implied value, which was usually one cent.

The vital side of the store card for many collectors is the one which contains the name of the merchant. This side, for attribution purposes, becomes the obverse and the other side — regardless of its theme — becomes the reverse. Thus, Washington, Lincoln, Indian Head, Turban Head and Eagle dies are considered reverse for the store card series.

The Fuld's also mention in their reference works that attention should also be given to certain types of Civil War store cards, namely the checks and tokens of the sutlers who supplied the Union Army. A sutler was a vendor who followed the Army and sold provisions and luxury items such as those found in a modern day military PX or post exchange.

Please see **CIVIL WAR** Page 32



**THE MESSAGE** was clear on this patriotic token featuring the father of our country, George Washington.



**AS WITH COINS**, patriotic Civil War tokens also have their errors, like this off-center piece with a design which resembles an Indian Head cent.



**PATRIOTIC** Civil War tokens usually carry a design on one side suggesting preservation of the Union.



**PRESIDENT LINCOLN** was immortalized on a number of patriotic Civil War tokens.





**THIS RARE**  
Louisville,  
Ky., store  
card from  
liquor sales-  
man George  
Brucklacher  
is struck over  
an 1853  
Seated  
Liberty, With  
Arrows dime.

Many of the sutlers of the era issued metal tokens to insure themselves the trade of soldiers to whom they had extended credit.

Professional die sinkers produced store cards not only for individual merchants and tokens for sutlers, but also struck and sold tokens which had no reference to a specific business concern. Since these usually included a patriotic theme, they are referred to as patriotic Civil War tokens.



**NEW YORK** mer-  
chant and store card  
issuer Gustavus  
Lindenmueller  
refused to redeem a  
large quantity of his  
tokens which the  
Third Avenue  
Railroad had accept-  
ed in the course of  
business.

In addition to being issued in 1-cent denominations, pieces were also issued at values of 10, 15 and 25 cents as well. The most frequently encountered design found on the patriotics is the Indian Head, copied from James B. Longacre's copper-nickel cents of 1859-64.

One die copied the reverse design of the U.S. cent, capturing the denomination ONE CENT within the wreath. Other designs were used, along with variations of the denomination, such as GOOD FOR 1 CENT, NOT ONE CENT and PAY THE BEARER ONE CENT.

Other inscriptions noted the use of the copper pieces as emergency money, slogans such as A PENNY SAVED IS A PENNY EARNED, VALUE ME AS YOU PLEASE and FOR PUBLIC ACCOMMODATION.

Other themes include ARMY AND NAVY, the Monitor ironclad, cannons, the Union flag, UNION FOREVER, the eagle, Andrew Jackson, the U.S. Constitution, birds, animals, snakes, and fraternal orders, such as the Free and Accepted Masons and the Independent Order of Odd Fellows, to name but a few.

There are also examples with pacifist themes, such as PEACE, PEACE FOREVER, and HORRORS OF WAR, BLESSINGS OF PEACE.

In addition to the circulating store cards and patriotics, Civil War token die sinkers also manufactured new varieties and sold them to interested collectors and speculators at premiums well above those charged for circulating specimens.

These collector pieces come in the form of:

- Off-metal restrikes of die combinations already used for circulating copper pieces;
- Mulings of dies of circulating tokens;
- Mules of dies of circulating tokens, but struck in different metals, such as brass, nickel, copper-nickel and white metal;
- Restrikes of circulating varieties;
- Overstrikes (struck over other tokens or actual U.S. coins).



Production of these new varieties took place during and shortly after the war. Some were used by collectors to produce specimens as late as 1940. Accordingly, say the Folds, the vast majority of patriotic Civil War tokens fall into the "new varieties" classification.

The Third Avenue Railroad reportedly requested Gustavus Lindenmueller, a New York merchant and store card issuer, to redeem a large quantity of his tokens which they had accepted in the course of business, but Lindenmueller refused.

Incidents such as this forced the hand of the federal government. In April and June 1864, Congress passed legislation pro-

hibiting private individuals or firms to issue any kind of money. Thus ended an important era of monetary innovation.

For those interested in Civil War token collecting, The Civil War Token Society is a national specialty collectors group dedicated to the collecting and study of patriotic Civil War tokens and store cards.

The society publishes a quarterly journal The Civil War Token Journal, the cost of which is included in the annual dues of \$7. Interested persons wishing to join the CWTS should send their dues to CWTS Secretary Jeff Shevlin, 7879 Greenback Lane, Suite 250, Citrus Heights, Calif. 95610. **CW**

*"There were no means  
to make the necessary  
change. Merchants had  
to rely on their own  
ingenuity in developing  
monetary substitutes."*



#### SUTLER TOKENS

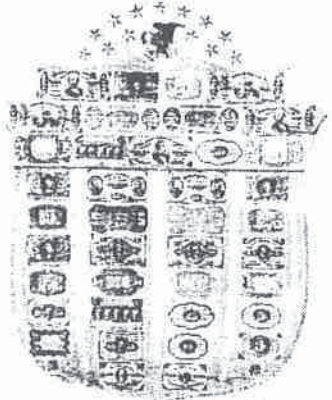
were issued by tradesmen, or sutlers, who followed the Union troops and sold their goods at encampments, forts and outposts.

916-722  
8961

# Stack's Sept. auction grosses nearly \$254,000

By Robert Obojski

The famed Series of 1934D Kansas City \$5/10 double-denomination Fed-



A Currency shield that hung in the San Francisco Mint brought Stack's \$5,500.

eral Reserve Note, in extremely fine condition but pressed and slighted faded, was hammered down for a very strong \$9,900 at Stack's Sept. 6-7 United States Coins and Paper Money auction staged at New York City's Park Central Hotel.

This error note, having the John W. Snyder signature, has the \$5 Lincoln portrait obverse and the \$10 U.S. Treasury Building reverse.

The sale, consisting of over 500 bank notes and over 1,800 lots of U.S. coins, grossed nearly \$254,000 and featured Colonials, Nationals, fractionals, obsolete notes, a specialized collection of Texas Nationals, as well as error notes.

"Bidding was strong and competitive, with the Texas Nationals showing the greatest strength. Paper money is no doubt one of the hottest areas of the numismatic market today, with knowledgeable collectors more determined than ever to acquire top notes for their col-

lections while they are still available. A number of records were set as both collectors and dealers bid vigorously for the majority of the lots, many of which had not been publicly offered for years," said Martin Gengerke, Stack's currency specialist and a veteran of many years in the field.

There were about 100 bidders in the room, while several hundred mail bidders also participated in the sale. All prices quoted here include a 10 percent buyer's premium. Stack's does not give pre-sale estimates for U.S. coins and bank notes.

Top realization for any single National Bank Note in the sale was the \$6,875 paid for the Goldthwaite, Texas \$10 specimen Series of 1882, "Bank Serial Number 1," Fr. 490, VF to XF, which was knocked down for \$6,875.

Among other small-town Texas Nationals was a \$10 note from Rosebud, Fr. 581, fine but trimmed slightly at bottom, that realized \$1,430. Rosebud, near Rogers, never had a population reaching 2,000.

Copies of the sale catalogue are still available, together with a prices realized list, for \$10. Orders should be directed to Stack's at 123 West 57th St., New York, NY 10019.

# Encased postage

New book result of 15 years of research into Civil War money

After 15 years of painstaking research, former *Coin World* news editor Fred L. Reed III's *Civil War Encased Stamps: The Issuers and Their Times* has come to fruition.

Reed is now vice president/publishing for the world's largest producer of hobby price guides, Beckett Publications in Texas.

He has been an active collector since 1955. He is a charter member of the Civil War Token Society, a member of the American Numismatic Association

since 1964, the American Numismatic Society since 1975, and numerous other specialty collector clubs. He is a voracious collector of Abraham Lincoln memorabilia.

The 551-page tome, published by BNR Press of Port Clinton, Ohio, comprises a history, merchant chronicle catalog, auction summary and counterfeit guide to John Gault's patent mineral and met-



Reed

al store card emergency money of 1862.

Extensively replete with photographs and illustrations of encased postage, their manufacture and historical photographs, documents and news accounts of the period, *Civil War Encased Stamps: The Issuers*

*and Their Times* traces the evolution of encased postage from the brainstorm of visionary inventor and entrepreneur John Gault in Boston to solve the small change crisis during the Civil War.



**JOHN GAULT** patented his grand idea to encase U.S. postage stamps in a brass frame with mica cover for circulation during the small change crisis. Massachusetts businessman Arthur M. Claflin was one of Gault's smallest customers in terms of pieces issued. (Photo courtesy Bowers and Merena)

Providing a wealth of new information from original research, Reed's treatise also covers the encased postage issues of some 30 other business enterprises, through to Gault's adaptive process for production of ferrotype political campaign medals.

Reed concludes that while Gault's basic plan was to encase 5- and 10-cent stamps for sale to

merchants as small change, his "New Metallic Currency" went far beyond Gault's wildest dreams. It provided volume wholesalers a new advertising medium to launch new projects in the public domain and new enterprises were given public visibility on this new coinage substitute. Even the U.S. government, perplexed by the small change debacle, toyed with the idea of employing Gault's invention to solve the crisis.

*Civil War Encased Stamps: The Issuers and Their Times* includes appendixes cataloging

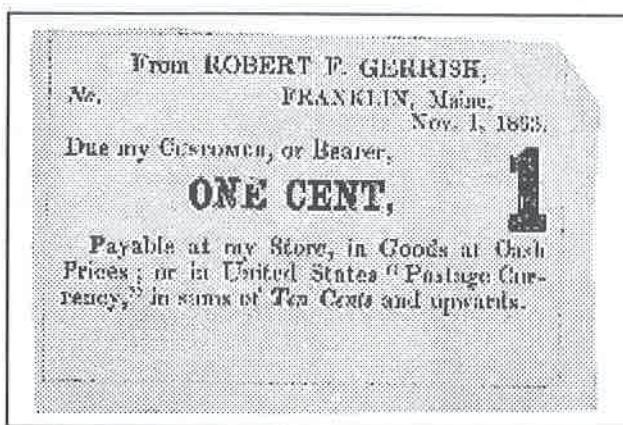
individual pieces with cross-references, rarity and price guide information, suggested emission modelling (profiles on issuers and denominations used), inventories of pieces in institutional collections and a catalog of ancillary items related to the collecting field.

Copies of the book are available through numismatic book dealers, or can be ordered directly from publisher, BNR Press, 132 E. Second St., Port Clinton, Ohio 43452, toll-free (800) 793-0683, for \$60 each plus \$3 shipping.



A recent find of a "Payable-in-Postage" Note has led me to wonder if it is time to produce an updated new catalog of these illusive little gems. I would appreciate words from our members concerning their interest in an update and reissue of "the Catalog of Obsolete Notes Redeemable in Postage Currency". If you would like to see a reissue please drop a line to "Milt Friedberg, 8803 Brecksville Road, Unit 7-203, Brecksville, OH 44141-1933.

In the meantime please revise your current catalog by renumbering the 2 Cent Robert F. Gerrish from Catalog Number 40 to Number 40A. Insert the following as Number 40. The note is printed on cream paper in dark blue ink and has a blank back.



The note measures 67 mm wide x 45 mm high as defined by the printed blue box on the face.

# Protecting the Greenback

*Digital color systems can reproduce paper money with disconcerting accuracy. The U.S. government's response is a new series of notes*

by Robert E. Schafrik and Sara E. Church

Surprisingly, paper currency remains a cornerstone of modern commerce. The predicted "cashless society," in which all transactions are made with checks, credit cards, debit cards and electronic transfers, has not yet materialized. More than \$380 billion in U.S. currency is estimated to be circulating worldwide, and demand for the bills increases annually at a rate of about 5 percent. In the 1995 fiscal year alone, the U.S. Treasury Department's Bureau of Engraving and Printing is scheduled to deliver more than nine billion new notes, with a total value exceeding \$130 billion. Almost a fifth of the 50 billion banknotes circulated in the world are U.S. currency.

Internationally, the greenback holds a unique position, serving as a de facto world currency, accepted universally and even held as an investment where local economies are uncertain. Because of this special status, changes to U.S. currency are not made lightly. In fact, the basic design of U.S. currency has not changed significantly since 1928.

During the next few months, however, presses at the Bureau of Engraving and Printing will begin rolling out currency with a fundamentally new design. With a larger, off-center portrait, a matching watermark and other new elements, the first note in this series, a \$100 bill, will be issued in 1996. Then, at one-year intervals, the bureau will introduce new \$50, \$20, \$10, \$5 and possibly \$1 bills. Although such a sweeping currency change in the U.S. is unusual, many countries routinely modify the look of their money. Canada, Australia, France, South Korea and Argentina, to name a few, have all redesigned their paper notes recently or are now doing so.

The main purpose of these programs is to make the currency more secure against counterfeiting—the threat of which has resurged in recent years with the appearance of advanced photocop-

iers and computer scanners and printers capable of producing high-quality and often convincingly realistic copies. Dealing with this type of misuse is important for the future of paper money because widespread counterfeiting strikes at the credibility of paper currency as an exchange medium.

## Countering a New Threat

Counterfeiting is as old as paper money itself, but color reprographics have added a troubling spin. Traditional counterfeiting methods require specialized printing equipment, inks, papers and other materials that raise suspicions when acquired by those unauthorized to use them. Counterfeiters typically invest considerable effort and capital to produce large amounts of phony notes. This modus operandi enables the U.S. Treasury's Secret Service and other law-enforcement agencies to discover and seize most counterfeits before they are circulated. In contrast, the new color reprographic technology allows people—and not just hard-core professional counterfeiters—to make bills in smaller amounts and at the push of a button, with equipment that generally cannot be traced.

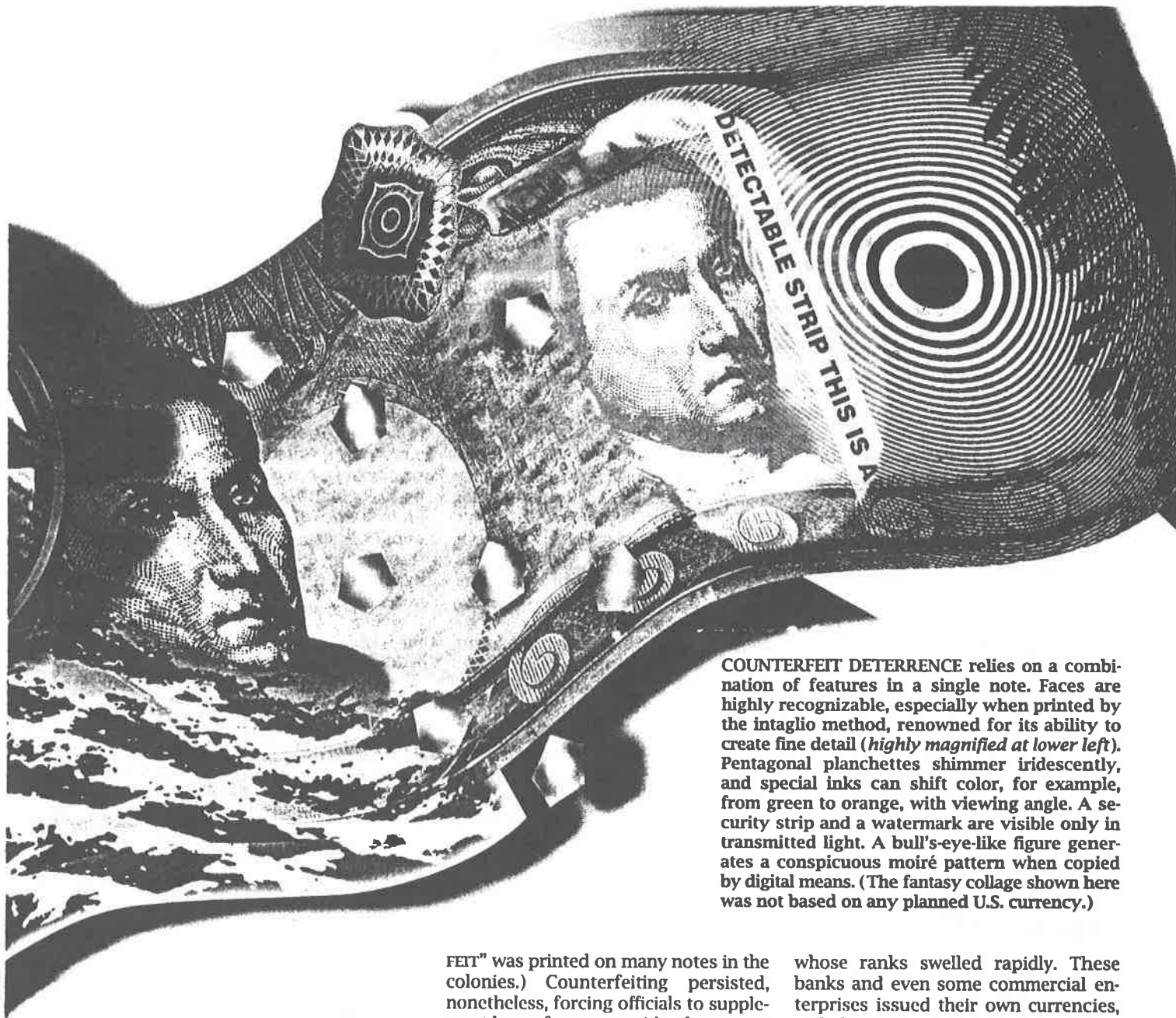
The amount of counterfeit generated by all methods and entering circulation in the U.S. is on the rise, although the amount is still low compared with other forms of fraud in financial transactions. In the fiscal year ended September 30, 1993, the Secret Service reported that \$20 million in counterfeit bills was passed on to the U.S. public. That amount increased to \$25 million in the next fiscal year, and at the halfway point in 1995, \$15 million had already been passed. (To put these figures in perspective, fraudulent checks result in losses estimated at \$10 billion every year in the U.S., and counterfeit credit cards add at least another \$100 million.)

Color reprographics accounted for only a few percent of counterfeit currency, but the trend, particularly in the counterfeiting of U.S. notes outside the country, is a gradual but steady shift toward these newer methods.

Counterfeiting of paper money within the U.S. has largely been contained because the Secret Service seizes the vast majority of notes before they are passed. In the fiscal year 1994, \$183 million was confiscated—75 percent of it overseas with the help of local law-enforcement agencies. In the following six months, \$148 million was seized, 62 percent of it at non-U.S. sites. If phony money keeps turning up at this rate, 1995 will obviously be a banner year







COUNTERFEIT DETERRENCE relies on a combination of features in a single note. Faces are highly recognizable, especially when printed by the intaglio method, renowned for its ability to create fine detail (*highly magnified at lower left*). Pentagonal planchettes shimmer iridescently, and special inks can shift color, for example, from green to orange, with viewing angle. A security strip and a watermark are visible only in transmitted light. A bull's-eye-like figure generates a conspicuous moiré pattern when copied by digital means. (The fantasy collage shown here was not based on any planned U.S. currency.)

for the counterfeiting of U.S. bills, although 90 percent will be intercepted before entering circulation.

The total extent to which counterfeit U.S. notes are in circulation overseas is unknown, although anecdotal evidence suggests that it is a significantly larger problem in certain parts of Europe and South America than it is in the U.S. Interestingly, the most common fake bill found within the U.S. is the \$20 bill, whereas foreign counterfeiters prefer the \$100 one. Foreign preference for the C-note might be partly explained by the fact that two thirds of all U.S. \$100 bills are believed to be abroad.

The maximum sentence for counterfeiting in the U.S. is 15 years' imprisonment and a \$5,000 fine. In colonial times the most severe (but rarely imposed) penalty was death. ("TO COUNTERFEIT IS DEATH" or "'TIS DEATH TO COUNTER-

FEIT" was printed on many notes in the colonies.) Counterfeiting persisted, nonetheless, forcing officials to supplement law enforcement with other means of discouragement. This is where deterrence comes in: legitimate banknote designers and printers have long used specialized skills, technology and materials to make counterfeiting harder.

#### Change for a \$13

Only twice in U.S. history did counterfeiting become endemic—during the Revolutionary and Civil wars. During the Revolutionary War, the British carried out large-scale counterfeiting to undermine the financial stability of the various currencies used throughout the colonies, particularly the notes issued by the Continental Congress to finance the rebellion.

Later, as the young country expanded, the need for cash intensified. In the absence of a federal bank, this cash came mostly from state-chartered banks,

whose ranks swelled rapidly. These banks and even some commercial enterprises issued their own currencies, with distinctive designs and denominating systems (including \$3, \$7 and \$13 notes). By the beginning of the Civil War, as many as 1,600 different currencies were effectively in circulation in the U.S. The huge numbers of banks (including some bogus ones), currencies and currency designs, insecure money-printing practices and lax, corrupt or unfair law enforcement combined to engender what is known as the golden age of counterfeiting.

Of course, legitimate money printers were not sitting idly by amid this chaos. Special methods and designs for producing banknotes began taking hold to make the bills more difficult to counterfeit and the genuine ones easier to distinguish. In fact, almost all the basic features and many of the processes used to this day to combat counterfeiting had their origins during this period. Intaglio printing came into wide use for



currency printing in the early 1800s because it required techniques, materials and skills not widely available. In this technique the image is transferred under high pressure from a design engraved into a metal plate.

High-quality "rag" papers consisting of cotton or linen, or some combination of the two, were used, sometimes adorned with watermarks or fiber inclusions. Elaborate designs depicting skillfully executed allegorical vignettes and detailed machine rulings became common. Portraits were also incorporated, to take advantage of the easy recognition of the human face. Although these techniques were certainly steps in the right direction, their usefulness was undermined by the large numbers of designs and issues in circulation in the mid-1800s.

To help the public keep track of the hundreds of currencies, genuine and otherwise, handbooks were available that illustrated the special features and characteristic details of the different notes. The manuals also described the many individual counterfeits in circulation and were updated and reissued as the need arose. A typical example was *Peyton's Counterfeit Detector: The Principal Points Which Constitute a Genuine Banknote*. It enumerated 26 characteristics of bona fide notes, contrasting them with counterfeits. The 1839 edition described 1,395 circulating counterfeits and listed 20 issues of fictitious banks, 43 banks with worthless notes,

54 bankrupt banks and 254 banks with counterfeit notes. By 1863 as much as half the paper money in circulation was thought to be counterfeit.

#### A National Currency, at Last

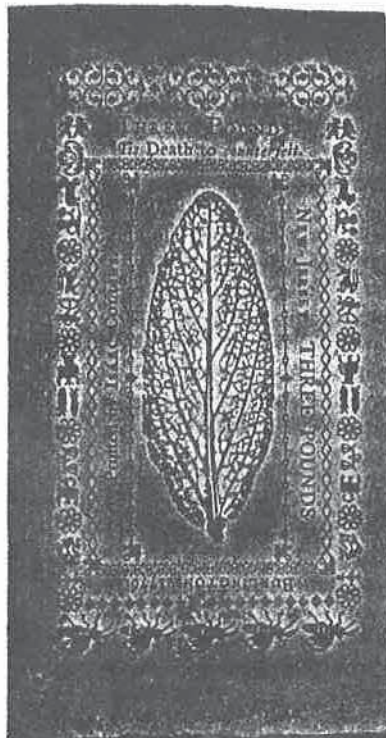
The Union's need to finance the Civil War finally compelled the federal government to establish a national banking system and to issue paper money. Thanks primarily to the efforts of Salmon P. Chase, the treasury secretary during Abraham Lincoln's presidency, Congress authorized the issue of the first U.S. Notes and also Fractional Notes—small-size bills worth less than \$1. At the Treasury Department, the Bureau of Engraving and Printing was established to print the new money. Along with the notes, first released in 1862, came a comprehensive strategy to combat counterfeiting.

Around this same time, the new technology of photolithography was making the counterfeiter's job easier. By photographing the notes and using the negatives to etch counterfeit plates chemically, the counterfeiter could produce large quantities of bogus notes without going through the tedious process of hand engraving. Photolithography, which is still the most common method of counterfeiting, was limited in two ways. Because of the nature of the etching process, the minute details of the design were lost compared with the original, a limitation that still holds true. In addition, films in those days were

sensitive only to dark and light, not to distinct colors. Thus, to copy a subject with two colors required separate steps to remove the secondary ink, produce the plates for the main color and repeat the process for the second color.

To take advantage of these weaknesses, the new notes used finely detailed designs printed with excellent inks on the best paper stock. The new designs were executed by top engravers and intaglio printed on both sides. Such all-around quality made counterfeit copies, with their typically inferior methods and materials, all the more readily distinguishable by comparison. For the U.S. Notes, the main part of the design was printed in traditional black, but other parts were printed in a green ink that could not be removed without destroying the note. This same green was used on the backs of the notes, probably to minimize visibility of the back image through the translucent, slightly green paper, which would obscure the face image and lower the overall quality of the note. This verdant ink gave rise to the moniker "greenback."

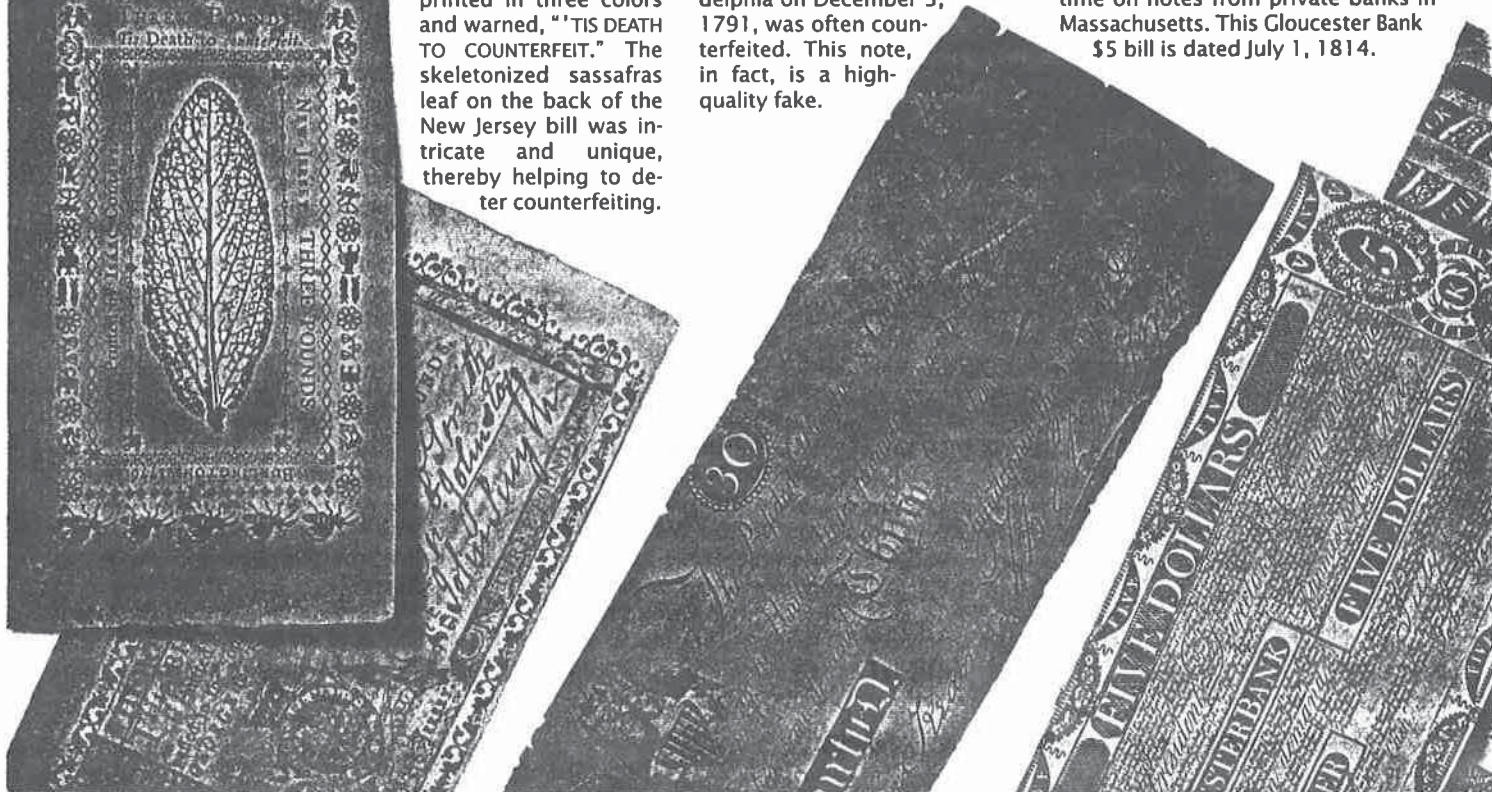
Even the paper itself was improved. Partly on the advice of the newly established National Academy of Sciences, a distinctive paper with tinted, nonphotographable fibers embedded within two layers was adopted for the notes. These fibers, or "spider legs," were used mainly for the Fractional Notes. Other currency paper contained one or more long blue fibers in bands or shorter, colored fibers, added directly to the pulpy



£3 colonial note dated March 25, 1776, was printed in three colors and warned, "'TIS DEATH TO COUNTERFEIT." The skeletonized sassafras leaf on the back of the New Jersey bill was intricate and unique, thereby helping to deter counterfeiting.

\$30 bill released by the Bank of the United States in Philadelphia on December 3, 1791, was often counterfeited. This note, in fact, is a high-quality fake.

High-density scrollwork known as the "Perkins format" was required for a time on notes from private banks in Massachusetts. This Gloucester Bank \$5 bill is dated July 1, 1814.





slurry ("furnish") during paper manufacture. These features, coupled with the distinctive, greenish color, the special furnish and tight control of the supply, separated the paper from ordinary stock. It was—and still is—illegal to possess the distinctive paper used for U.S. currency without special authorization.

For the much counterfeited Fractional Notes, a special ink was developed as a further deterrent. Before intaglio printing, relatively large areas on both sides of the paper were printed with a bronze metallic ink. On the face, the inked area corresponded to the oval within which the central portrait was printed; on the back, the bronze shape repeated the value of the note. The ink's metallic character was not easily photographed or reproduced.

The original colored Treasury Department seal, with its 34 points (representing the 34 states, including the 11 that had seceded the year before), was considered difficult for a counterfeiter to copy. It was added typographically in a separate step. In another separate typographic step, serial numbers were assigned and overprinted on each note. Although the seal has varied in size and character over the years, the basic design survives today. The quality of its design and the sharpness of its points continue to challenge counterfeiters. The color of the seal and serial numbers, which has varied among red, blue, brown, gold and the now traditional green, was a further obstacle.

These features, combined with vigor-

ous enforcement of the counterfeiting statutes by the Secret Service (formed in 1865), worked well. By 1872 a detection and law-enforcement network had been established, and approximately 2,000 counterfeiters had been arrested.

Even with these successes, considerable confusion persisted because of the variety of currency types and designs. In the decades following the Civil War, 15 separate categories of currency in multiple denominations, each with different face and back designs, were issued. These bills included Demand Notes, U.S. Notes, National Bank Notes, Currency Certificates of Deposit, Silver Certificates, Gold Certificates, Treasury Notes, Refunding Certificates and Federal Reserve Notes.

Formal recommendations to standardize currency designs were made as early as 1909. World War I and changing presidential administrations kept the idea from becoming a reality until the summer of 1929, when the Series 1928 notes were finally issued. The portraits and backs selected for this series have remained in use to this day with little change.

Standardization of the portraits and backs within a denomination was itself a deterrent feature, because the simple familiarity of a single portrait and back vignette for each denomination helped people recognize phony bills. The paper for the new notes contained millimeter-scale red and blue fibers, whose random distribution came about quite by accident. The intended localized

strips of fiber were chopped and scattered during the papermaking process, and the resulting paper was judged to be even more difficult to counterfeit than it would have been with the originally intended longer bands of fibers. The tiny colored lengths remain a hallmark of U.S. currency. Like today's bills, all the imagery, front and back, was intaglio printed, whereas the seals, serial numbers and bank numbers were overprinted typographically.

After their introduction in 1929, the few changes made to these bills over the ensuing 61 years were cosmetic or sociopolitical, such as the addition of "IN GOD WE TRUST," mandated by a 1955 law. The stability of the design has reflected a more or less unchanging counterfeiting threat. Counterfeiters enjoyed only modest, occasional technical improvements in photography and lithography in this period. All that changed dramatically in the 1980s, however.

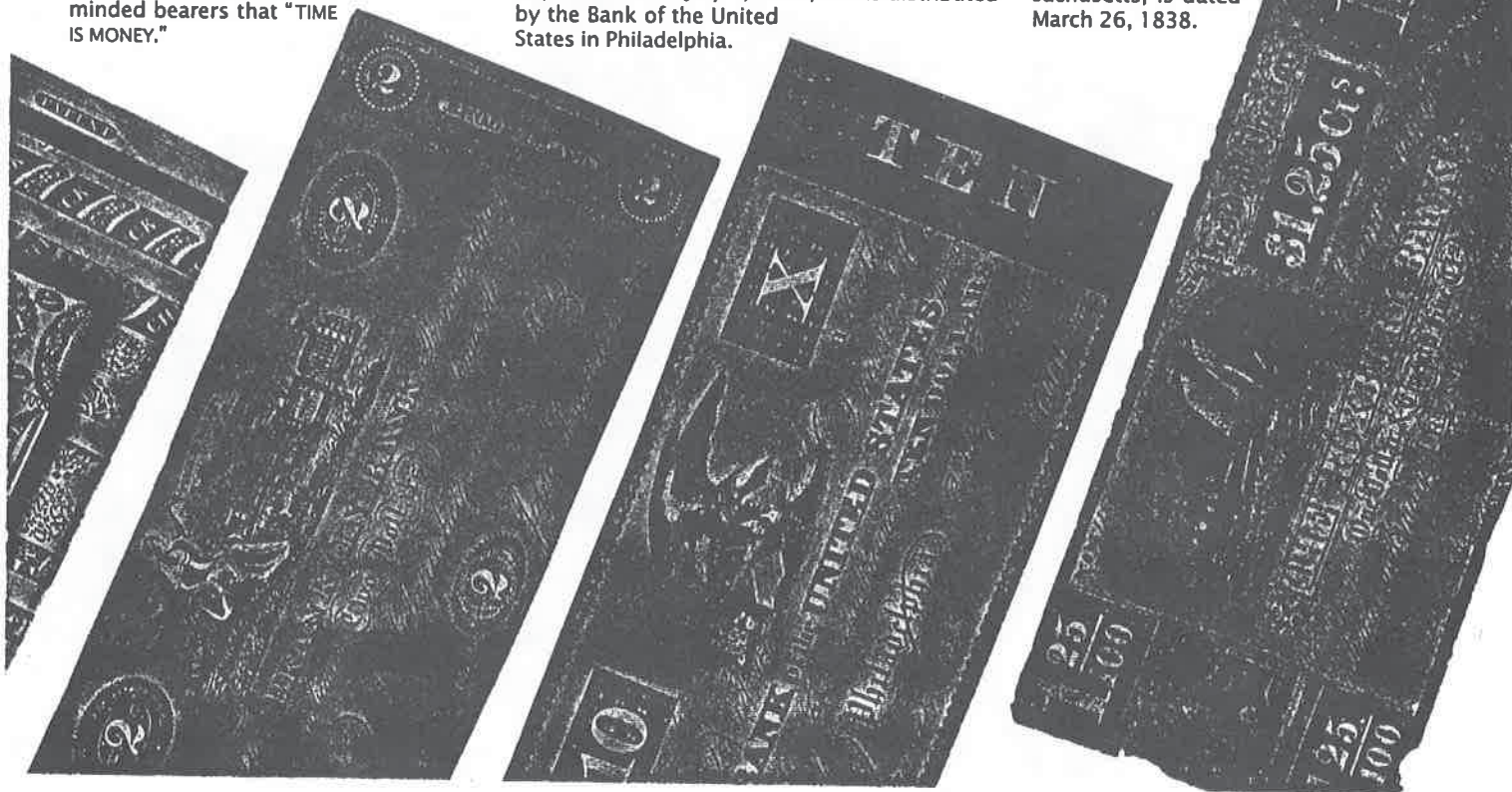
### Casual Counterfeiting

With the proliferation of high-quality color reprographic systems, such as photocopiers, the once technically demanding and esoteric pursuit of counterfeiting has been opened up to those with hardly any skills. Perhaps most disturbingly, these new tools eliminate the need for specialized—and traceable—equipment and supplies, making the counterfeiters much harder to catch. Besides photocopiers,

Engraved vignette on this \$2 note released by the Franklin Bank of Rhode Island on May 1, 1821, reminded bearers that "TIME IS MONEY."

Intricately printed defiant eagle and high volume of scrollwork made this \$10 bill harder to duplicate. Dated July 1, 1834, it was distributed by the Bank of the United States in Philadelphia.

\$1.25 bill, from the Roxbury Bank in Massachusetts, is dated March 26, 1838.





## Stopping Counterfeiting at the Source

An expert system can help deter casual counterfeiting by letting advanced copiers and computer scanners recognize when a user is attempting to copy currency. Canon has patented one promising approach to such a system. According to the company's European patent, an expert system and banknote images are stored in read-only memory. During copying, the successive red, blue, green and brightness scans of the copier provide data regarding the location and orientation of features to the program, which statistically analyzes the data and determines if the features match any of the stored images. If a match is found, the copier can be set to print a blank sheet and require resetting by a service technician. Such a solution to counterfeiting would not foil a technologically knowledgeable counterfeiter, but it would certainly discourage casual money printers.

Another approach to making this kind of counterfeit traceable involves encoding information within the copy that can be correlated with a unique copy-machine serial number. Special equipment reads the code to determine which copier made the counterfeit. The approach could be extended to computer printers, although it may require increased computational power to perform the preprinting processing.

which are actually integrated scanning and printing devices, these computer-based systems include stand-alone scanners that capture an image for storage and manipulation, along with the graphic arts software and color printers typically used with them. These reprographic devices spread from professional graphic arts environments in the 1980s to much larger business and academic communities, making it possible for almost anyone to try counterfeiting.

Fortunately, few people have so far availed themselves of this opportunity. In fiscal year 1994 counterfeit notes produced on color copiers and passed in the U.S. totaled \$990,138, or about 4

percent of all counterfeit money circulated in that one-year period. Halfway through fiscal year 1995, \$448,168 in color-copier-produced notes had been passed. But only \$750,000 was seized before being passed in the U.S.—less than half of what had been seized the year before.

Fiscal year 1995 is the first in which the Secret Service is keeping close track of bogus banknotes produced with ink-jet printers. With their low costs and rapidly improving capabilities, these printers are considered a significant and growing threat. Domestically, \$13,312 had been passed halfway through this year, whereas overseas the amount was

in excess of \$4 million. Some \$54,400 of these notes was seized before entering circulation in the U.S.

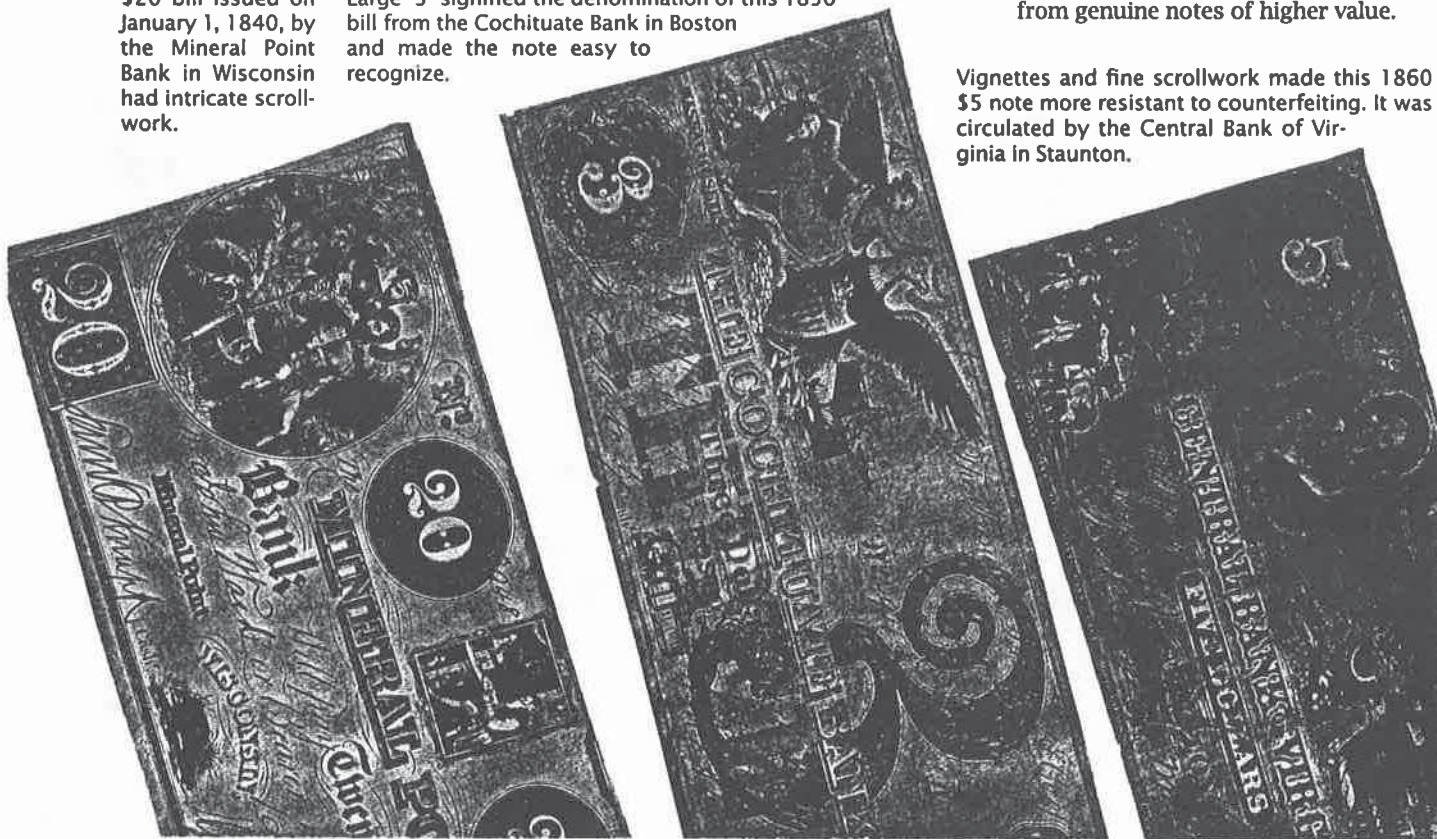
Although the numbers now are modest, the circumstances suggest that this is no time for complacency. The low volume so far of counterfeits produced with color reprographics can be attributed, at least in part, to slower than estimated introduction of the machines into the marketplace. The initial high cost of the equipment—\$40,000 for a color copier 10 years ago—inhibited sales, but much more capable color copiers are now becoming available for as little as \$4,000. Also, only recently have affordable color-capable personal computers and printers become common.

Foreseeing these problems, the Bureau of Engraving and Printing commissioned the National Academy of Sciences in 1985 and 1987 to assess the potential problem and to recommend countermeasures. Two of the academy's recommendations were put into effect, as can be seen in any \$100, \$50, \$20 or \$10 note starting with the 1990 series or in any \$5 bill starting with 1993. One is a polymer security thread contained within the paper, on the front left side of the bill. The thread, which lists the denomination and the letters "USA," is visible only when the bill is in front of a bright light. It does not show up in reflected light, which is used by copiers and scanners. The thread makes it more difficult to counterfeit a bill by color-copying or by "raising"—using a lower-value note to generate a higher one, either by bleaching and printing a higher denomination or by pasting on corners from genuine notes of higher value.

\$20 bill issued on January 1, 1840, by the Mineral Point Bank in Wisconsin had intricate scrollwork.

Large "3" signified the denomination of this 1850 bill from the Cochituate Bank in Boston and made the note easy to recognize.

Vignettes and fine scrollwork made this 1860 \$5 note more resistant to counterfeiting. It was circulated by the Central Bank of Virginia in Staunton.





The other anticounterfeiting feature is the microprinting, six to seven thousandths of an inch high, of "THE UNITED STATES OF AMERICA," repeated in a line around the outside of the portrait. Most copiers and scanners cannot resolve detail this small, and the resulting smear is obvious under magnification.

Nevertheless, like other forms of technology, these color reproduction systems—also known as nonimpact technologies to distinguish them from methods requiring plates or dies—are constantly being improved. Already good as counterfeiting tools, they will only become better. Their potential is such that the academy in a 1993 report deemed some relatively radical changes as necessary.

The time needed for analyzing and assessing new features and for designing, testing and scaling up production is approximately five years. Series of U.S. paper currency are never formally invalidated, or "demonitized." They can only be removed from circulation as they return to Federal Reserve banks; thus, it could take two years or more for the new notes to predominate in circulation in the U.S. So government currency experts must forecast what counterfeiters will be using five to 10 years from now and take steps early to thwart them.

Anticounterfeiting elements must meet many requirements. They must be immediately recognizable, difficult to duplicate or simulate, durable in the face of considerable wear and tear, and made of materials that are nontoxic and nonhazardous in manufacture, processing and even destruction. They also

need to be economical: all U.S. notes are now produced for less than four cents apiece. Ideally, the features should also be machine detectable and aesthetically acceptable to the public, the first line of defense against counterfeiting.

Combining deterrent features into a new paper currency requires a delicate balance; changes must be substantive enough to address the problem but not so radical they eradicate the public's familiarity with the currency. People all over the world need time to recognize a new bill; during such a transition, the currency could be more vulnerable.

The new series of U.S. bills, starting with the \$100 in 1996, will be fundamentally different. To minimize the impact of the discontinuity, however, their overall appearance will remain consistent with today's U.S. currency. Therefore, in the new design the bills will not change size and will retain the same portrait subjects, vignettes and basic colors as in the current notes.

As of this writing, the Bureau of Engraving and Printing has not completed preproduction testing of the candidate features that were announced in July 1994. Because some of them may be altered or eliminated based on the test results, the final note design has not yet been approved; however, some likely elements of the design are listed below.

#### Defensive Depth

The most immediately conspicuous features of the upcoming series of notes are likely to be their watermarks and enlarged, off-center portraits. On

each note they will be adjacent and will depict the same image. Although watermarks are common in European, Asian and South American currencies, this would be their first large-scale appearance in U.S. currency and the first use of a portrait watermark that is located in the same position on each note of a certain denomination. The inclusion of the watermark, in fact, was a major factor in redesigning the layout of the note; the shifting of the portrait from the center will make room for the watermark, enhance the portrait's visual impact and reduce wear on the image caused by folding of the bill.

Watermarks, which are designs created by variations in the density or thickness of the paper that become visible in transmitted light, are an example of a substrate-based feature—one of three basic types used to combat counterfeiting. Optimum deterrence results from a combination of multiple types in a "layered defense." The three kinds can be grouped together according to their place on the note: engraved designs that are difficult to reproduce convincingly, those that are placed in the paper while it is being made (substrate-based features) and unique printing inks. Besides watermarks, substrate-based features include the paper material itself, tints and paper-furnish inclusions and additives.

Another intriguing substrate-based feature would use iridescent, micro-printed planchettes. Traditionally, planchettes have been tissue-paper disks a few millimeters in diameter, distributed either randomly in the pa-

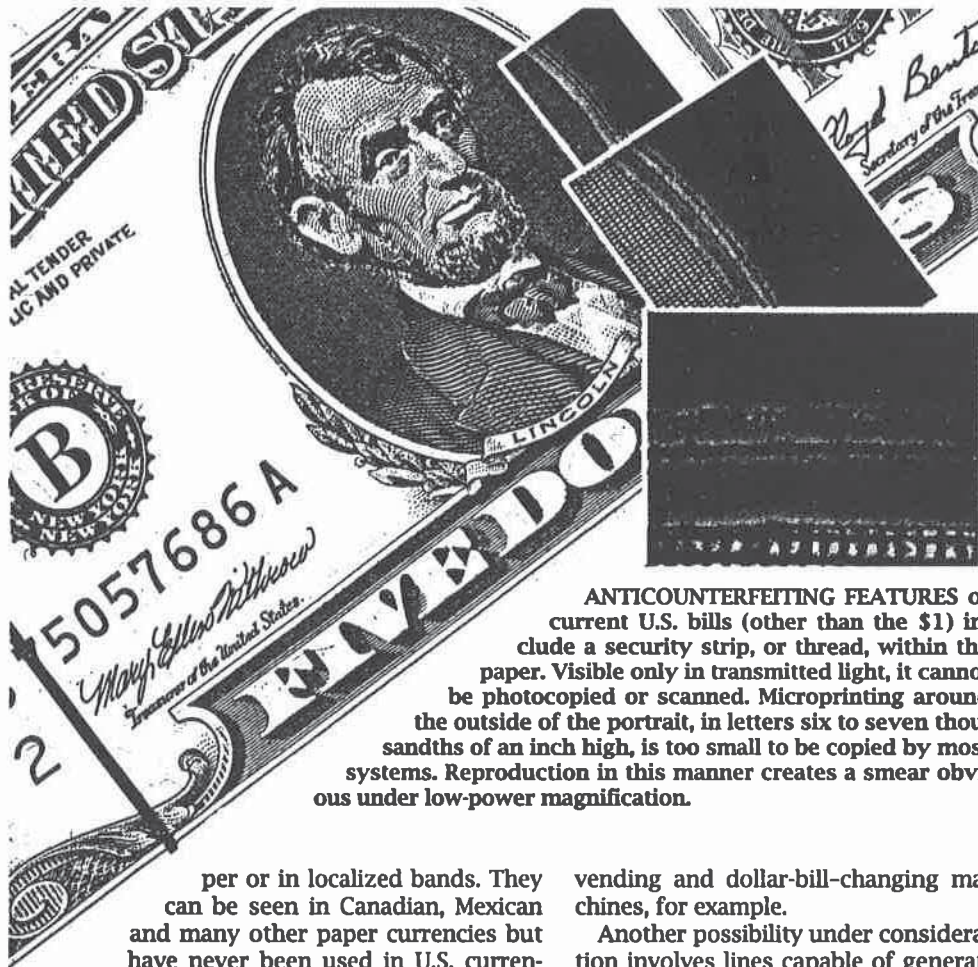
Virginia's state seal and the surrounding inscribed numeral fives would have challenged anyone trying to copy this \$5 bill circulated by the Traders Bank of Richmond in 1861.

\$7 bill issued by the Monticello Bank in Virginia on April 29, 1861, featured machine-engraved scrollwork. It circulated contemporaneously with Confederate notes.

\$2 "fare ticket" was circulated by the South Carolina Rail Road Company in 1873. Often used as currency, such tickets circumvented a 10 percent tax on all paper currency not printed by the Bureau of Engraving and Printing.







**ANTICOUNTERFEITING FEATURES** of current U.S. bills (other than the \$1) include a security strip, or thread, within the paper. Visible only in transmitted light, it cannot be photocopied or scanned. Microprinting around the outside of the portrait, in letters six to seven thousandths of an inch high, is too small to be copied by most systems. Reproduction in this manner creates a smear obvious under low-power magnification.

per or in localized bands. They can be seen in Canadian, Mexican and many other paper currencies but have never been used in U.S. currency. In the new design the planchettes would be made from a coated polymer film that appears in different colors as the angle of viewing is changed, giving a rainbow effect. As an enhancement, the planchettes could be microprinted with text.

The new bills will also have a security thread similar to the ones now in circulation, but possibly upgraded for detection by instruments. The threads may also be located in different parts of the note, depending on the denomination. The small colored fibers might also be supplemented or enhanced for detection by machines, to provide reliable authentication of the bills and their denominations. The features could be helpful in commercial situations in which cash is counted or exchanged—in

vending and dollar-bill-changing machines, for example.

Another possibility under consideration involves lines capable of generating moiré patterns. Advanced copiers and computer scanners create images based on digital sampling techniques, and when the spatial detail of the image being sampled is greater than the sampling frequency of the digital device, spurious and striking patterns result in the reconstructed image. These are known as moiré patterns. Images that would generate them when copied are being investigated for incorporation into the notes' designs.

One of the most intriguing possibilities is the use of special ink that changes color as the printing is tilted relative to the light. (In concept, it harkens back to the bronze underprinted shapes that adorned Fractional Notes.) The color shift is caused by small platelets of thin-film interference filters, used as pig-

ments in a regular ink varnish. The angular dependence arises from light beams interfering with one another as they reflect among alternating layers of a light-absorbing material, such as chromium, and a nonmetal, such as manganese fluoride. These layers are applied on top of a reflecting material, such as aluminum. These inks are much more expensive than the normal intaglio ink, so the size of the image printed with them would be limited to no more than about two square centimeters—big enough to exhibit a noticeable shift but small enough to keep costs reasonable.

### Vintage Protection

The basic tool kit available to those who deter counterfeiting has changed surprisingly little in over a century. Conceived in an era of printing presses, photography and lithographic plates, it is now being expanded in an era of sophisticated color copiers and scanners. The stakes are high. In today's world of strong economic interdependence, even a relatively brief period of rampant counterfeiting could have devastating consequences.

Given the pace of graphics and printing technology advances in recent years, it is unlikely that the new notes will suffice for six decades, as did the previous ones (albeit with a few well-chosen modifications). To supplement the deterrent value of the new notes, law enforcement—especially international cooperation—will have to expand as the use of the hard-to-trace printing technology spreads worldwide. Manufacturers of advanced reprographic equipment can help by making their equipment less suitable for counterfeiting.

The new notes will surely do much to discourage counterfeiters, both casual and professional, for years to come. Over the longer term, however, they might be considered only the latest salvos in a never-ending war.

### The Authors

ROBERT E. SCHAFRIK and SARA E. CHURCH have been involved in assessing counterfeit-deterrence features for the forthcoming series of U.S. paper currency. Schafrik is with the National Research Council (NRC) in Washington, D.C., as both executive director of the National Materials Advisory Board and acting executive director of the Manufacturing Studies Board. He was awarded a Ph.D. in metallurgical engineering in 1979 from Ohio State University. Church is a program manager and research chemist with the Office of Advanced Counterfeit Deterrence in the U.S. Treasury Department's Bureau of Engraving and Printing. A member of the department's new currency design task force, she holds a Ph.D. in physical chemistry from Oregon State University.

### Further Reading

HISTORY OF THE BUREAU OF ENGRAVING AND PRINTING, 1862-1962. U.S. Treasury Department, 1964.  
TWO CENTURIES OF AMERICAN BANKING: A PICTORIAL ESSAY. Elvira and Vladimir Clain-Stefanelli. Acropolis Books, 1975.  
COUNTERFEIT DETERRENT FEATURES FOR THE NEXT-GENERATION CURRENCY DESIGN. National Materials Advisory Board, National Research Council. National Academy Press, 1993.  
OPTICAL DOCUMENT SECURITY. Edited by Rudolph L. van Renesse. Artech House, 1994.  
THE COMPREHENSIVE CATALOG OF U.S. PAPER MONEY. Fifth edition. Gene Hessler. BNR Press, 1995.